

THE  
ARCHITECT  
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21 APRIL 1955

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VOL. 207

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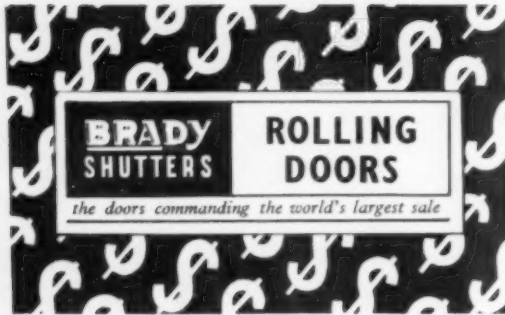
NO. 16

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• OIL-FIRED HEATING

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The Hong Kong installation consists of a battery of 10 Brady Steel Rolling Doors, hand and electrically operated.



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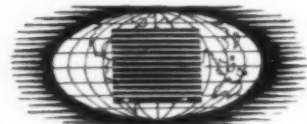
**LONDON** New Islington Works, Park Royal, N.W.10

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**CANADA** David C. Orrock & Co. (G. Brady & Co. Canada Ltd.)  
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## John Borthwick won't keep in character

Architects who have never met John Borthwick, our North West Divisional Manager, are due for a surprise. Quite naturally this broad, chunky man was a second row forward. Equally in character is his passion for vintage cars. And then you get to know him and discover he was once an art student, and holds an industrial design diploma, and can discuss the work of Modigliani or Corbusier and cultivates chrysanthemums in his garden. Strange mixture. You grumble that Mr. Borthwick is one of those people who just won't keep in character. But then, after all, he is a Williams & Williams Divisional Manager !

\* Mr. J. Borthwick supervises offices in Belfast (23762). Birmingham (Shirley 3064). Glasgow (Douglas 0003). Liverpool (Central 0325). Manchester (Blackfriars 9591).

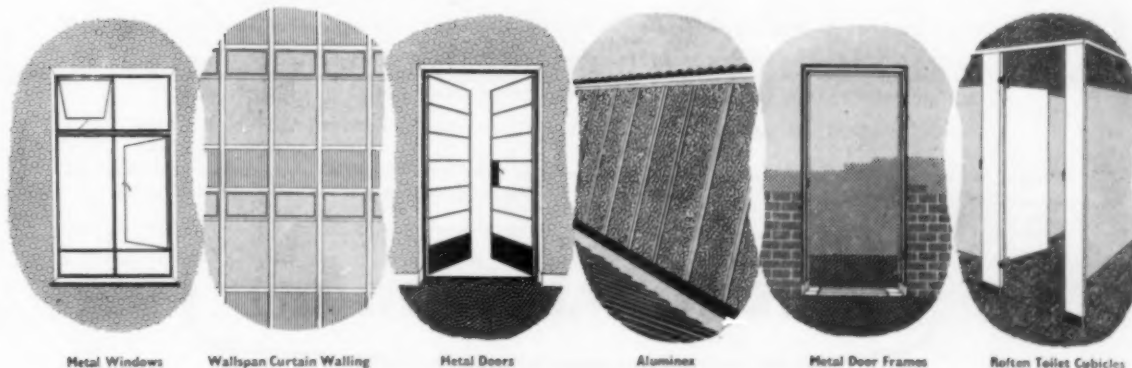
Other offices at: Bristol (38907). Bromley (Ravensbourne 6274). Cardiff (27092). Crawley (2200). Hertford (3969). Leeds (21208). London (Sloane 0323). Maidstone (51750). Newcastle-upon-Tyne (21353). Nottingham (52131). Reading (50291). Sheffield (51594). Southampton (26252).

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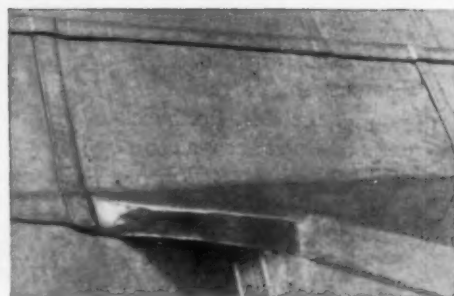


## Case history No.1

*Architects:* Borough Architects Department.

*Contractors:* T. & E. Neville Ltd.

*Details:* Norton Road Junior School, Luton. A 24 ft. diameter octagonal dome covered with 22 s.w.g. Super Purity Aluminium.



Super Purity Aluminium is a plumber's metal; 99.99% pure and the most ductile and workable form of aluminium obtainable. It is a permanent roofing material which costs considerably less than the more traditional plumber's metals, although it is capable of lasting just as long. Super Purity is particularly adaptable to curved roofs both from the economical and the practical point of view.

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**Road Transport:** structural members, floor planks and panelling, windows, tread strips, doors, small fittings, etc.

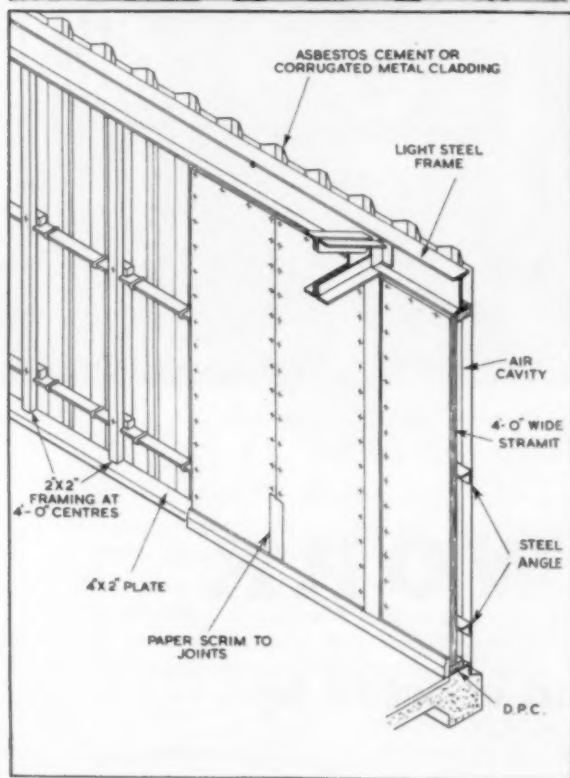
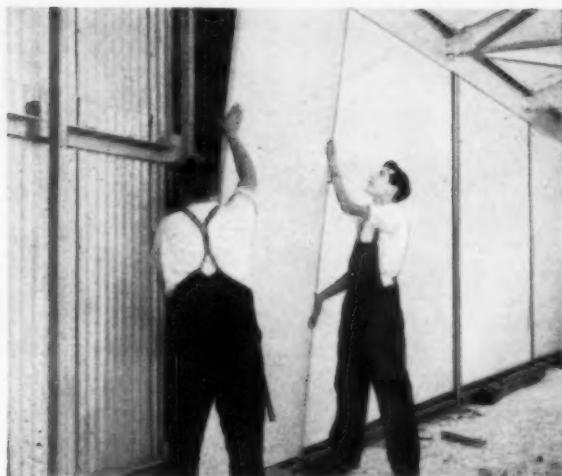
**Shipbuilding:** bridges, wheelhouses, outer funnels, lifeboats and davits, decks, skylights, stanchions, bulkheads, watertight doors, etc.

**Building:** roof coverings, side claddings, ventilators and windows, panelling, interior fittings, etc.

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—the measure of heat-loss through a construction, in B.Th.U's. per hour, over one square foot of its area, when the temperature-difference between its two sides is 1°F.

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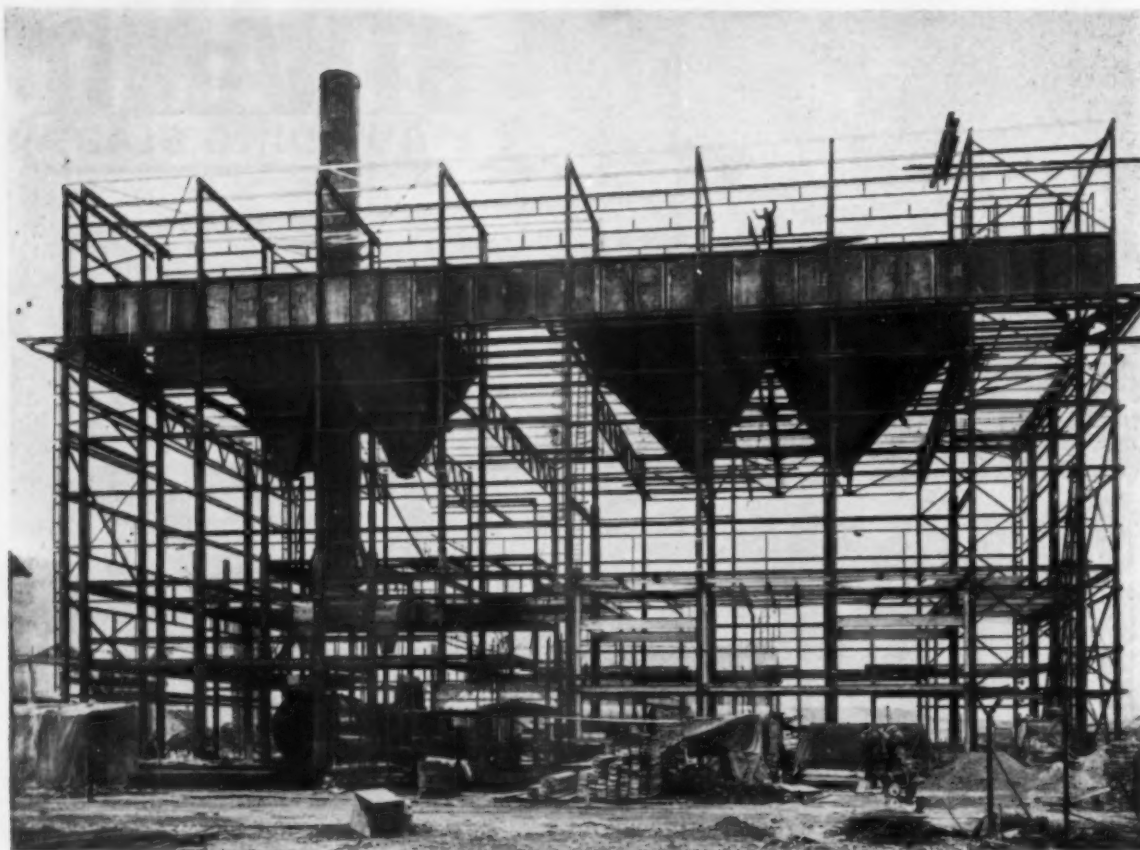
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Architects: T. Alwyn Lloyd & Gordon, P.P.T.P.I., F.A.R.I.B.A.

Contractors: Peter Lind & Co., Ltd.

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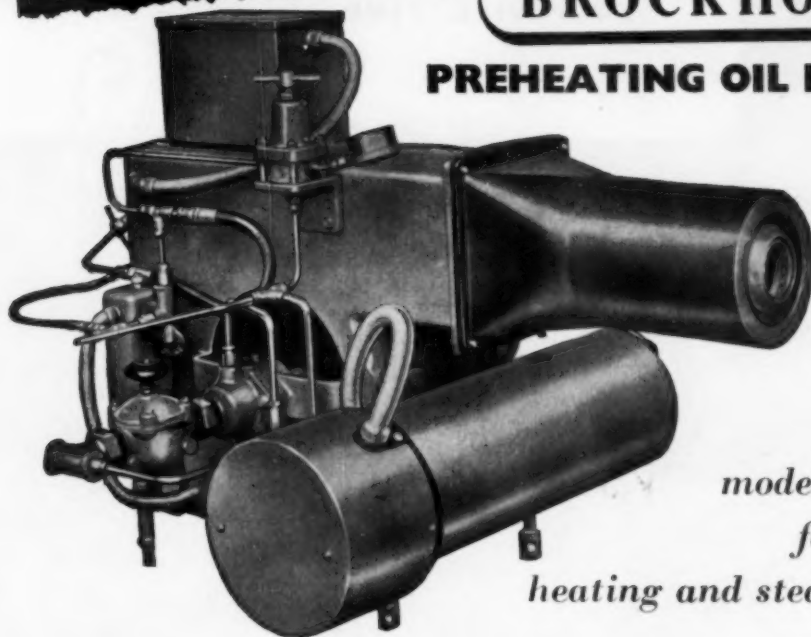


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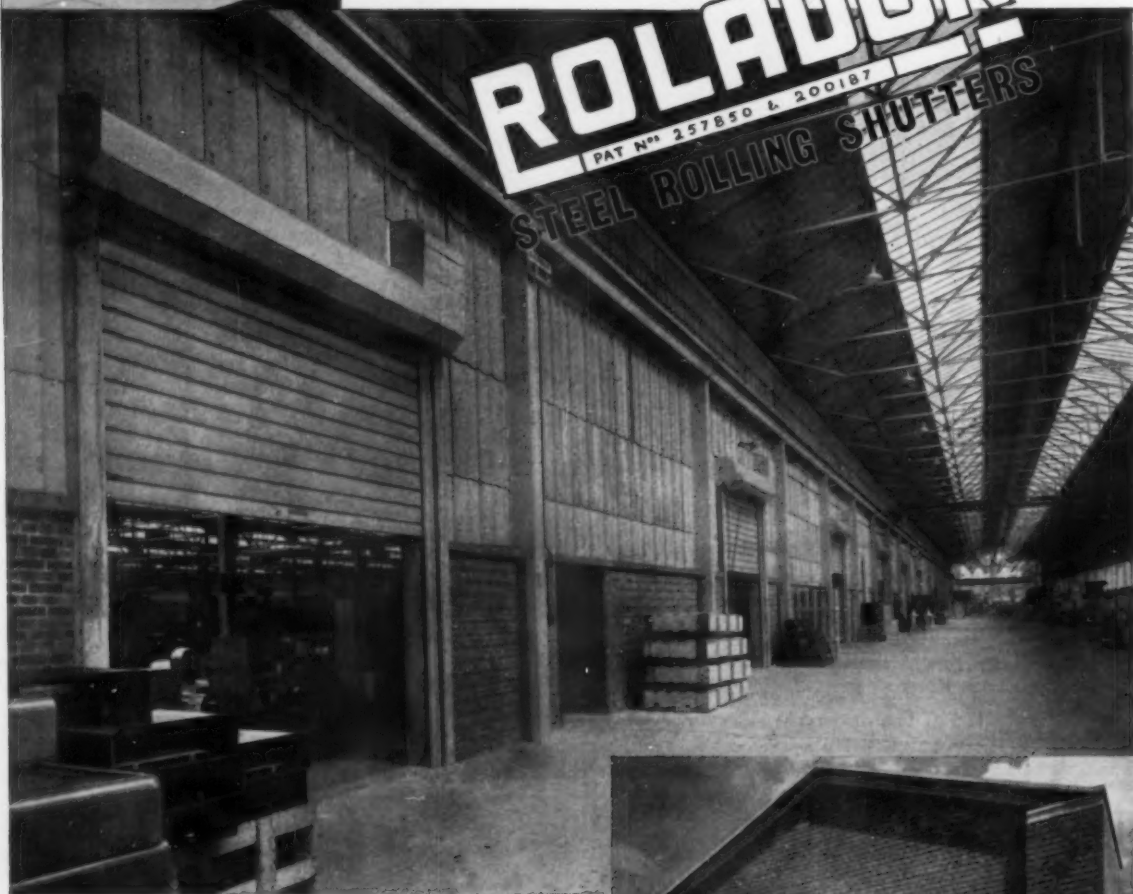
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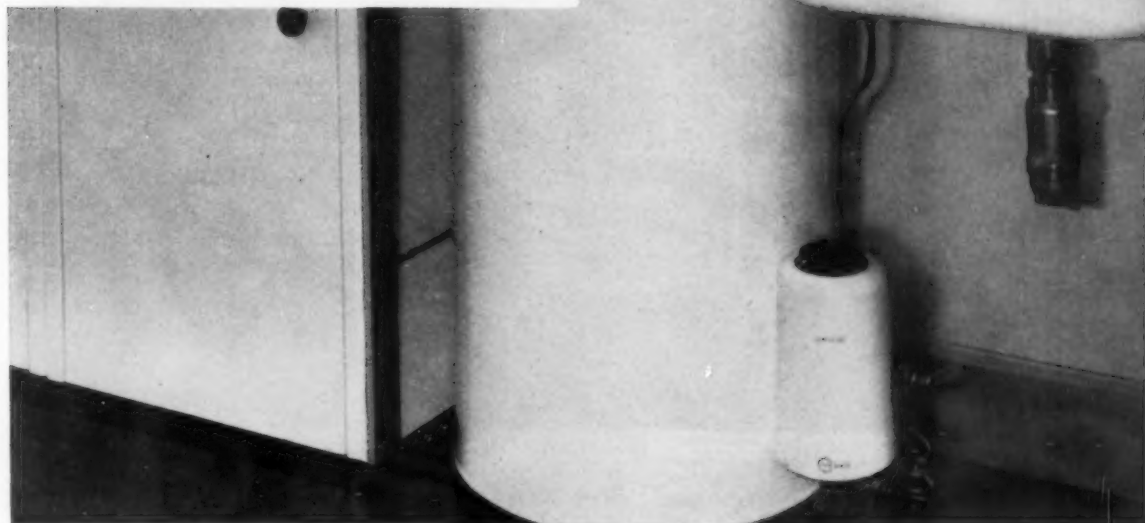
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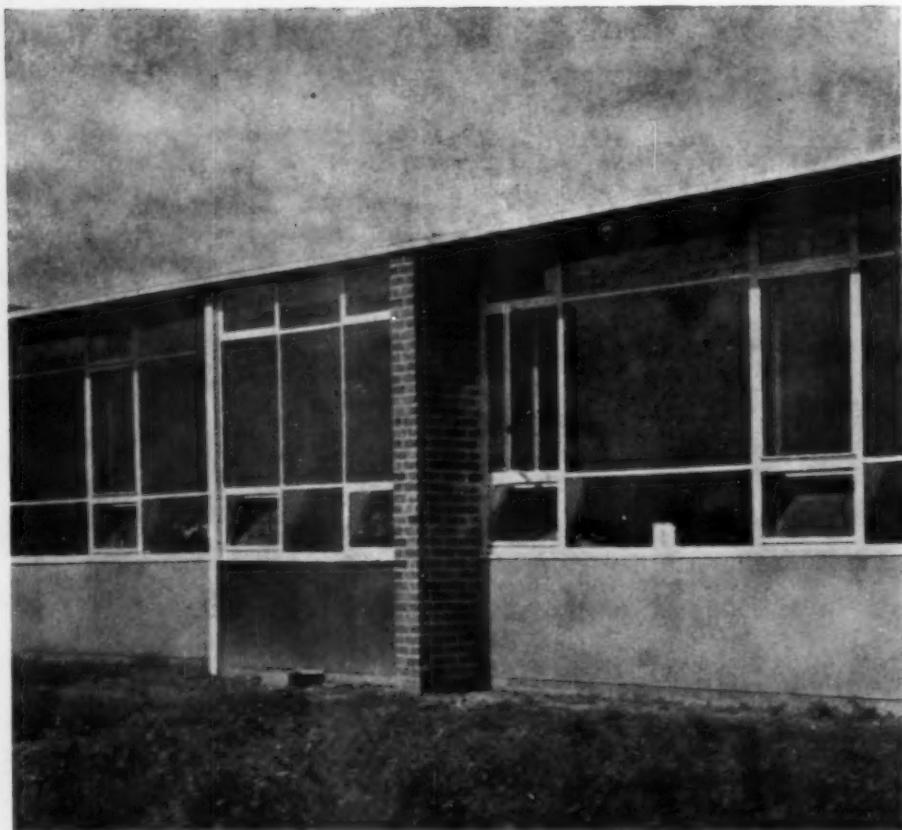
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Essex County Council***

**Architect : H. Conolly, F.R.I.B.A.**

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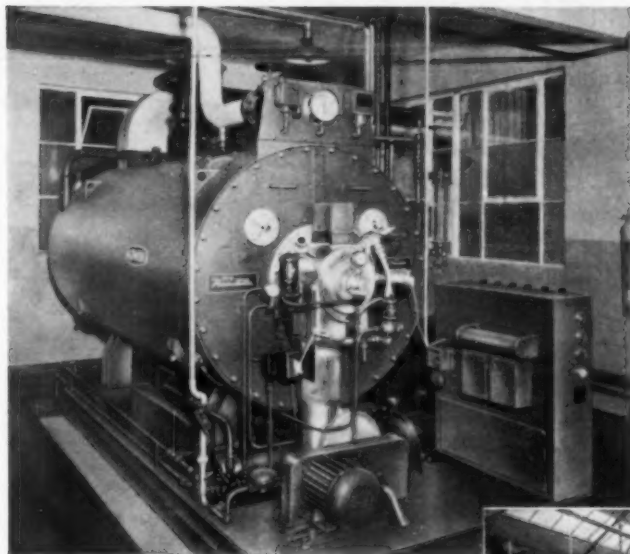
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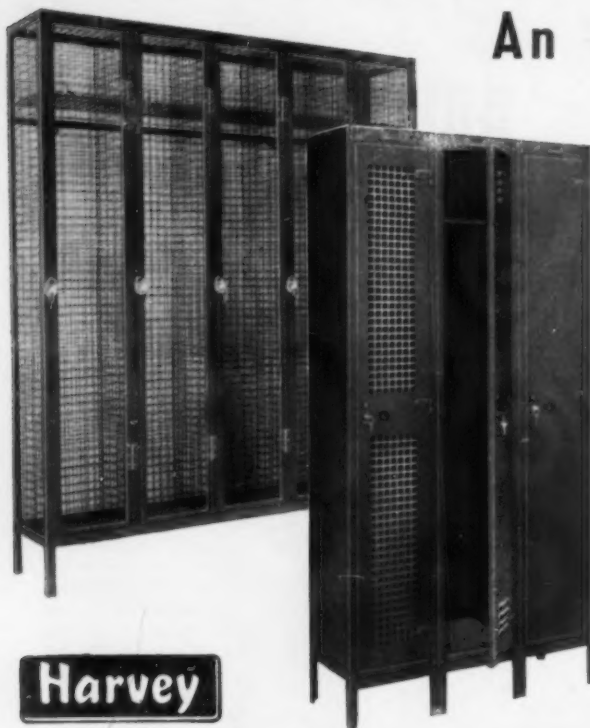
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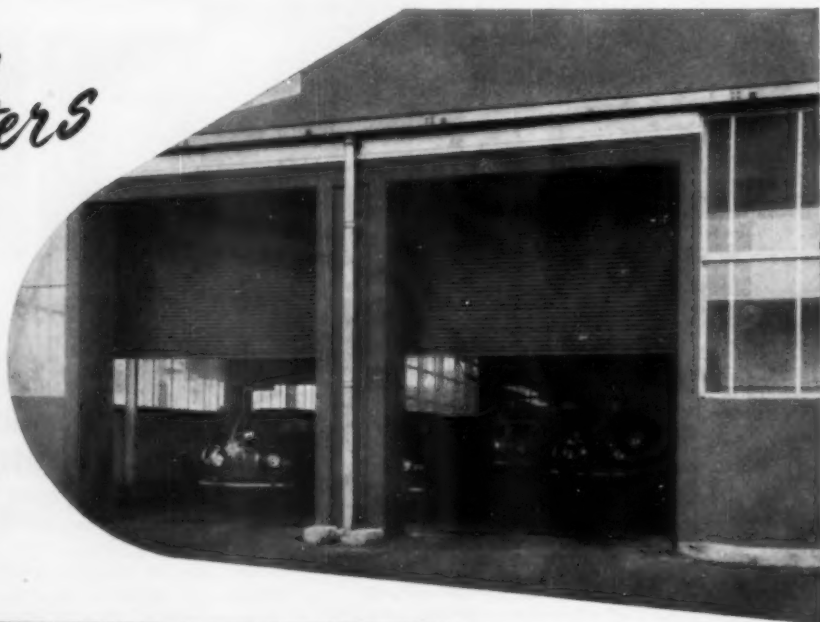
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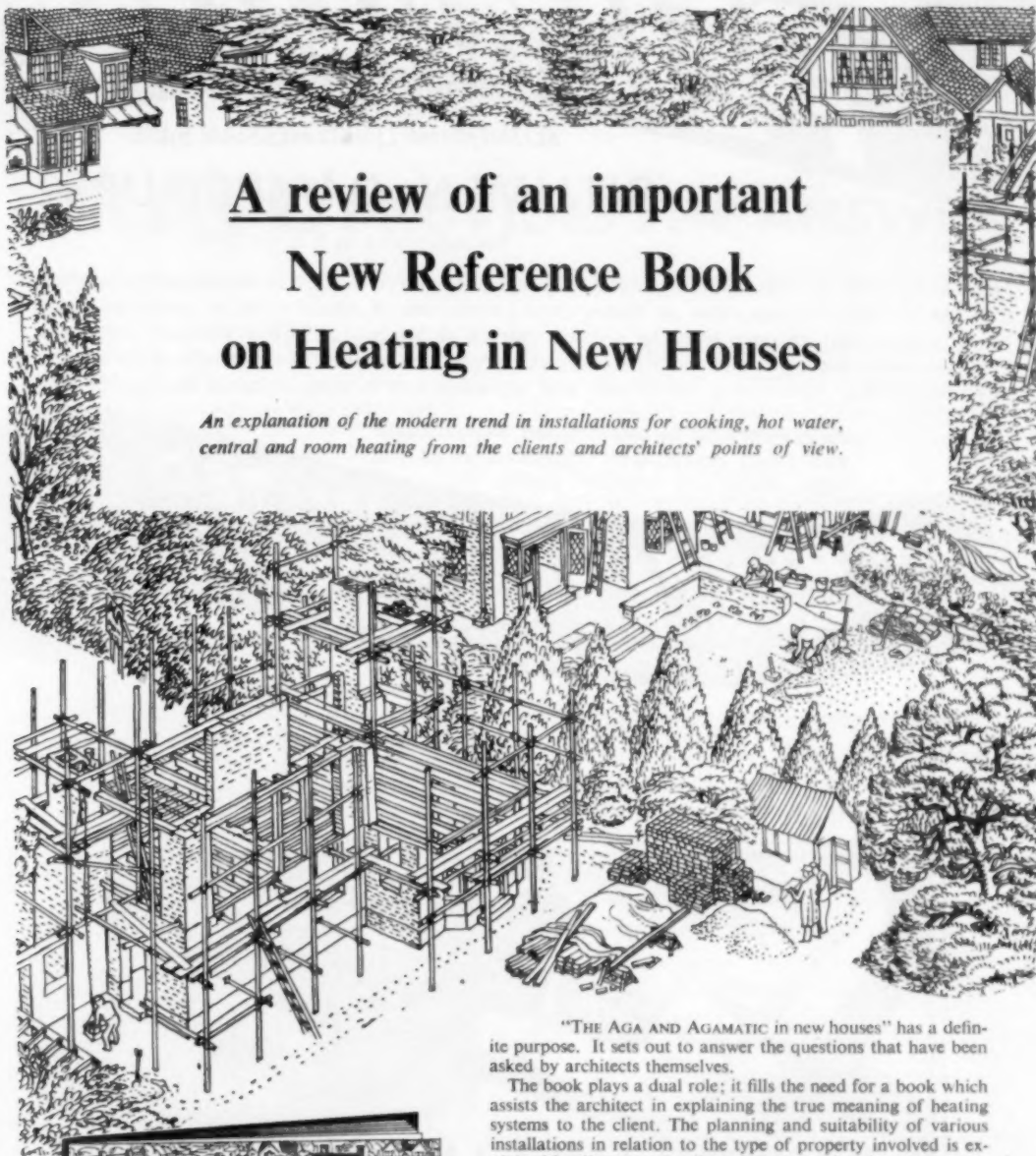
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The book plays a dual role; it fills the need for a book which assists the architect in explaining the true meaning of heating systems to the client. The planning and suitability of various installations in relation to the type of property involved is explained by diagrams, details and photographs of existing work.

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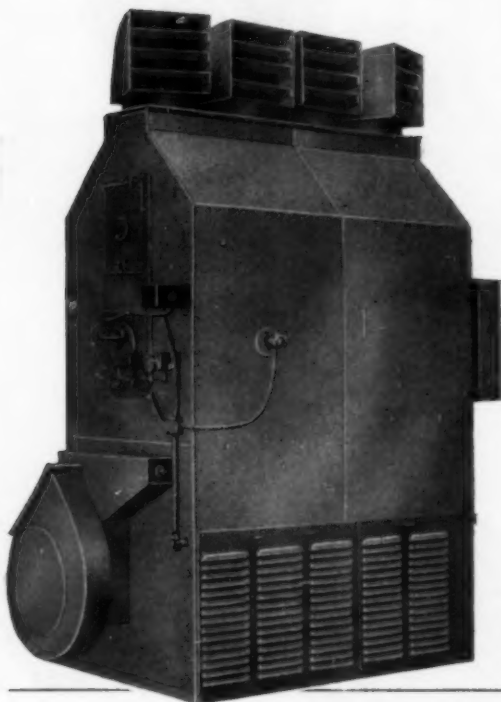


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3



4

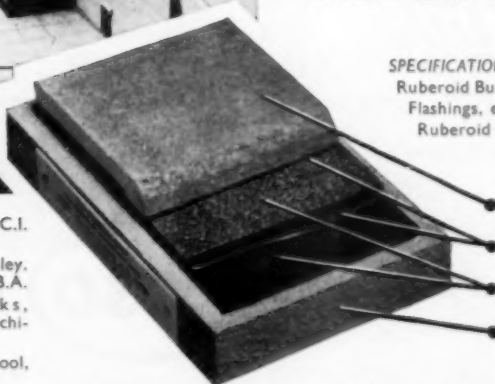


5

1. West Park Pavilion, Jersey, C.I. Architects: Blampied & Biggar.
2. Sports Pavilion, North Wembley. Architects: Duke & Simpson, F.R.I.B.A.
3. "Showboat," Sandbanks, Bournemouth. Residence of the Architect, A. J. Seal, Esq., F.R.I.B.A.
4. Latymer Foundation Upper School, Hammersmith. Gymnasium Roof. Architects: Chesterton & Sons.
5. Balcony at United Club, Jersey, C.I.

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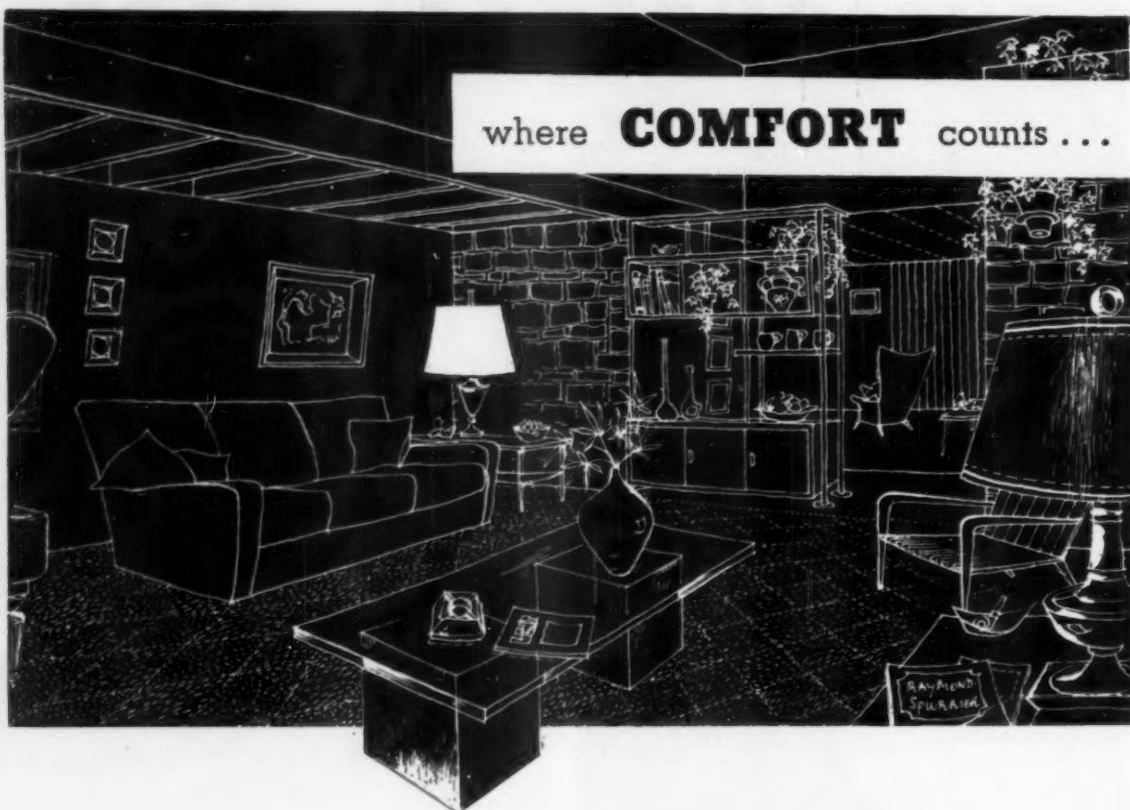
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**BRIGGS**  
*of course!*

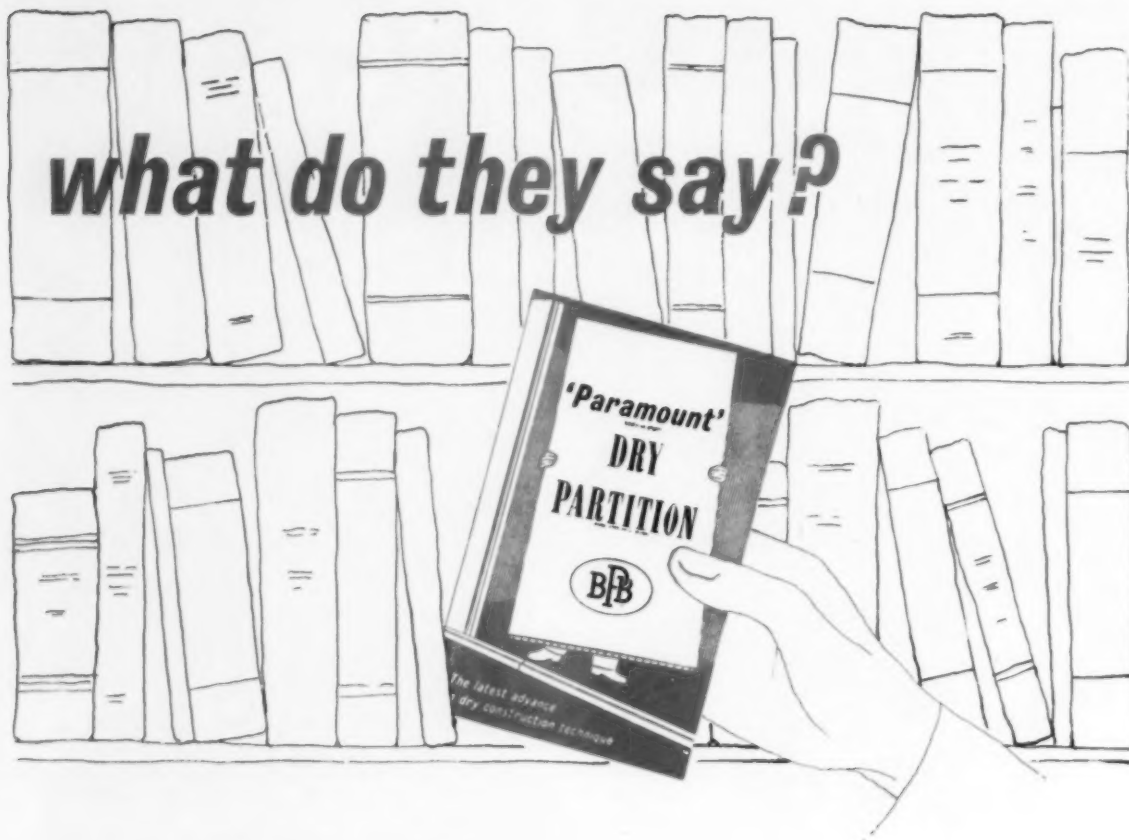


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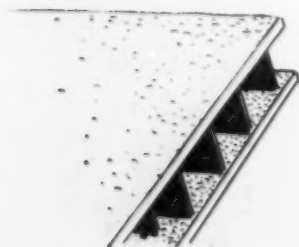
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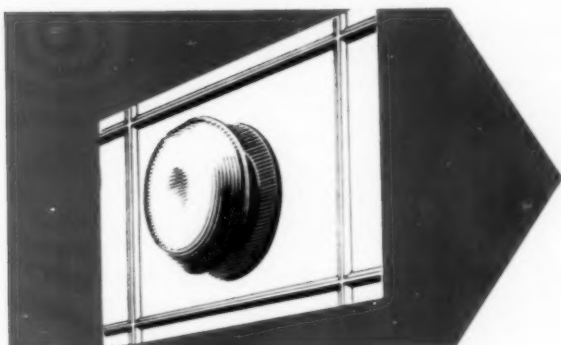
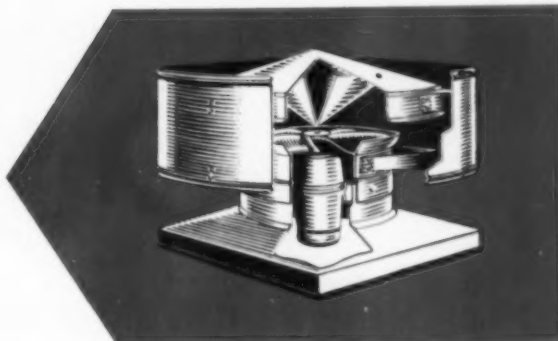
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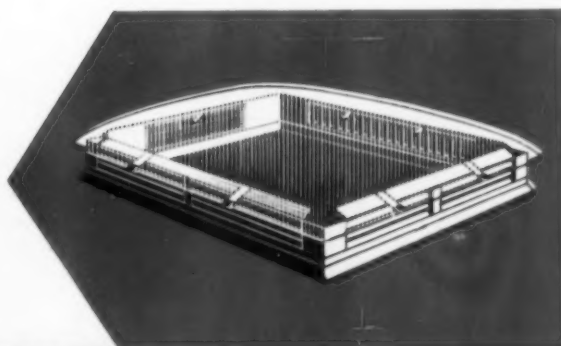
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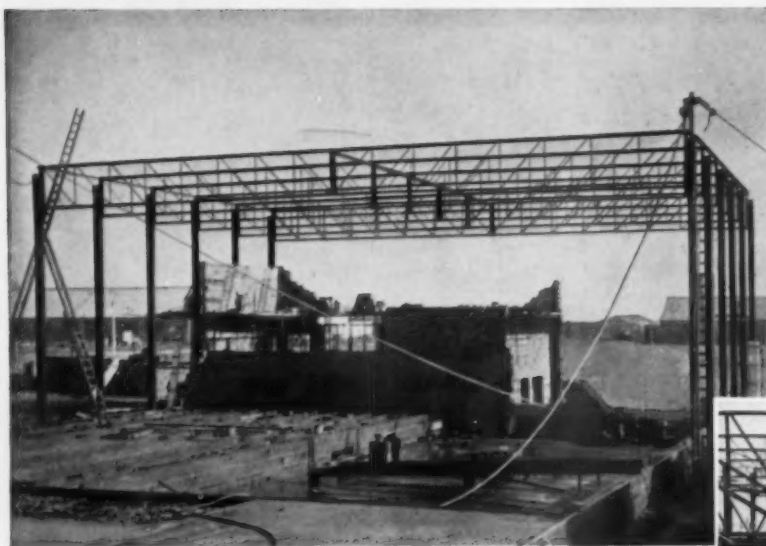
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# THE ARCHITECT & BUILDING NEWS

21 April 1955

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## FOCUS ON FUEL

SINCE the publication of the Beaver report in the autumn of last year supplements dealing with fuel economy have appeared in leading newspapers and periodicals; and the oil companies have given publicity to the use of fuel oil and burners for central heating purposes.

The Ministry of Fuel and Power besides preaching economy in the utilization of coal has been at pains for some time now to persuade gas and electricity undertakings to consider alternative primary fuels to coal for producing their respective products.

In short, the fact is now clear (if it was not before) that coal which for centuries has more than fulfilled Britain's total energy requirements and last year provided 85.9 per cent of it in spite of uncertain supplies, cannot increase its rate of production at anywhere near the rate of increase envisaged in the total demand for energy in the future and some other fuel will be required to fill the gap. Even if planned coal production is achieved and atomic power is available to some extent in 10 years it is expected that petroleum will need to make a growing contribution to the energy requirement of this country, although coal is likely to remain King Coal.

The situation was well summed up by the Minister of Fuel and Power, Mr. Geoffrey Lloyd, in the first article of the *Birmingham Post's* recent supplement on fuel efficiency. He said: "The main issues are simple. We have built up our industrial production to a higher level than ever before and in so doing have maintained full employment. So far so good. But we can no longer look forward to setting more and more men to work, for they are all at work already. Sir Harry Pilkington, president of the Federation of British Industries, emphasized this point in Birmingham recently when he said that man-power was now the most scarce commodity in the country. And so if we are to

gain that higher production which alone can bring a higher standard of living we must seek means of getting more output per man. This can be done only by giving each operative in industry more power to his hand.

"Great efforts are being made to provide for the additional power requirements of the future; the reorganization of the National Coal Board, the exciting programme for large-scale electricity generation by atomic energy, the encouragement of the use of oil fuel wherever possible are all part of the plan to meet the ever-increasing demands for heat and energy."

The growing importance of oil therefore suggested to us the need for spotlighting its use for central heating. Elsewhere in this issue are articles dealing with oil firing for central heating boilers and information about the products of burner manufacturers.

Oil firing has certain inherent advantages. The calorific values of the various coals range from about 10,400 B.Th.U. per lb for long flame bituminous coal to 1,500 B.Th.U. per lb for anthracite. The calorific values of fuel oils, on the other hand, range from 18,500 B.Th.U. per lb for bunker fuel to 19,500 B.Th.U. per lb for a light distillate fuel oil. There is no ash disposal problem with fuel oil; and it is possible to control the mixture of air and fuel to enable optimum mixture strength to be used. To judge by the growth of refinery in this country, there should be no shortage of oil supplies provided the crude can come in. There seems to be a well organized service of tankers to deliver supplies either through agents or from the oil companies themselves, provided traffic congestion and inferior roads do not handicap delivery by heavy tanker.

Conversion of existing plant may be a costly capital item. The Government are aware of this

and loans are available to industrialists who can make worthwhile savings by changing from coal to oil. Furthermore the Minister of Fuel and Power is holding discussions with Government Departments, nationalized industries and other public authorities to see how they can save coal by using more oil.

The Minister described as "a useful suggestion," the idea put forward in the House of Commons just before Easter by Mr. Robens, that the industrial loan scheme should be extended to domestic consumers, who wished to change over to oil. We support Mr. Roben's idea and hope that the Minister will see his way to extending the scheme as suggested.

## EVENTS AND COMMENTS

### THE ROYAL GOLD MEDAL

Knowing where to draw the line in matters of praise or blame is always difficult. To honour adequately, generously and honestly is to balance on the knife edge between faint praise and slop. This year's Royal Gold Medallist qualified by his work and personality for some above-average oratory, and he was lucky. All the speeches were remarkably good, and by some expert planning, or great good chance, they scarcely overlapped. It was, in fact, a symposium on John Murray Easton.

While obviously touched by the many fine things said about him, Mr. Easton waved them aside with a characteristic shrug and bow. His speech was by no means the least brilliant of the evening. A lesser man might well have paled before so much eloquence. Not so Mr. Easton. He is never completely serious and on this night he was in his best form. He spoke of, among other things, the usefulness of clients, his wife's good cooking, and the fact that becoming a Royal Gold Medallist was like joining a new and austere club, a club with the difference that

most of its members were dead. I make the proportion 17 out of 107. How many of the seventeen can you name?

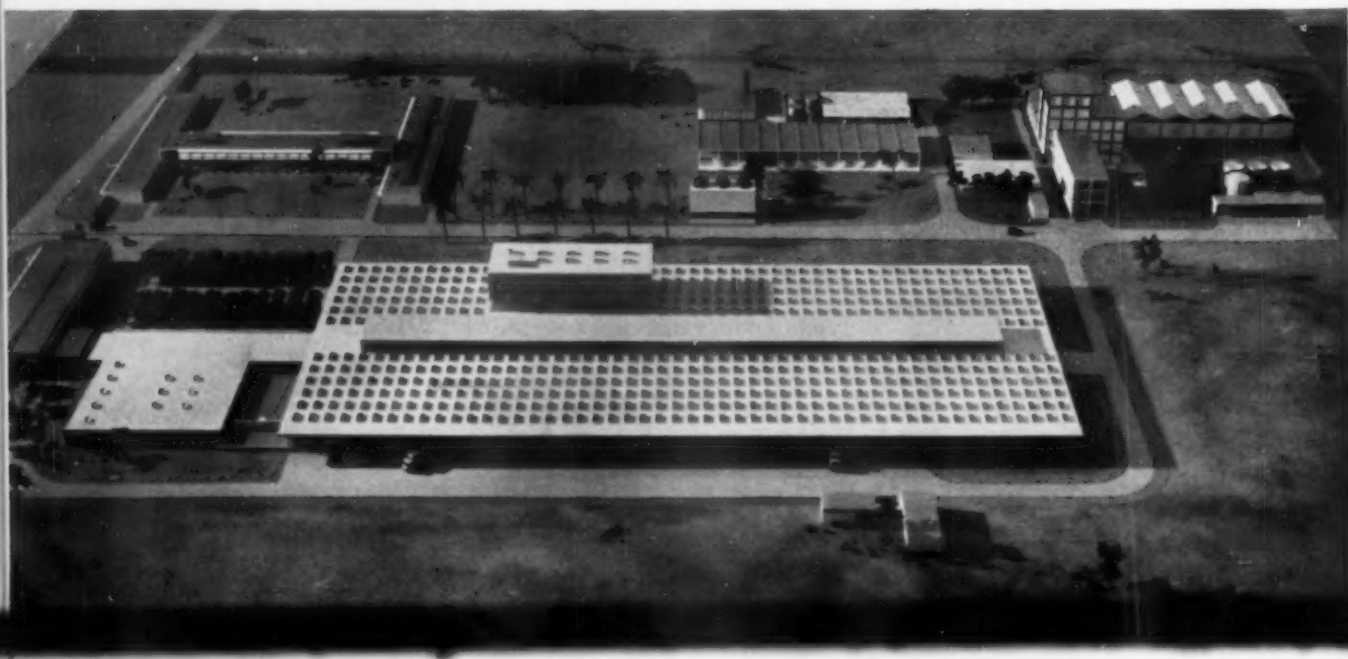
### THE A.A. RECEPTION

The awning outside No. 34 Bedford Square is among the first signs of spring, and very welcome, too. This year's reception followed the familiar pattern except that the usual queuing for the cloakrooms has now been completely done away with and the general circulation has been greatly improved. The numbers attending were less than usual, around 800, and there was little congestion anywhere. There was even room to dance. Among the exhibitions the president's drawings of woodland birds (for a King Penguin book) and Miss Sheila Gibson's studies of Byzantine architecture and mosaics were outstanding. Mr. Peter Shephard continues to amaze me by the breadth of his knowledge and the number of his talents. The exhibition of bird drawings shows the studies made from unstuffed specimens in the Natural History Museum and the finished plates. Pencilled on the studies, which I find almost as delightful as the finished thing, are the times taken to draw them—20 min. to 45 min. I asked Mr. Shephard how long the finished ones took, and he said, with a serious look, that some of them took as much as six hours.

Miss Gibson's work, done as a result of the award of an A.A. travelling scholarship, astounds alike by quality and quantity. I understand that since her drawings were mounted on both sides of the paper the vast amount shown was only about a half of the total.

To receive and greet so large a body of persons with grace and, at least, the appearance of pleasure, is to achieve a good deal. Mr. and Mrs. Shephard, however, appeared really to enjoy their task. Last year I commented on the sad state of the clothing of many of the men. This year it was one year worse. Architects can, and do, get away with being badly dressed by day but it will not do by night. They would not have their lovely women appear in such fusty and ill-fitting things. A well-turned-out woman, and there were many at the A.A., deserves a well-turned-out escort. On the other hand, I

*Model of the proposed Burma Pharmaceutical Industry factory designed by James Cubitt & Partners, which was presented by Mr. James Cubitt, M.B.E., to his Excellency Sao Boonwaat, chargé d'affaires of the Embassy of the Union of Burma, at the Dorchester yesterday. Holland & Hannen and Cubitts Ltd. are the general contractors*





saw at least one beautiful new tail-coat, and, oh lawks! at least one new-fangled dinner jacket.

### ENGLISH ELECTRIC SHOCK II

In the politest possible way the English Electric Company has pointed out that I have been misinformed about the decision regarding the plans for the Gaiety site. The subject has not even been discussed by the Board. I am sorry for my error but—Brer Rabbit he lay low and say nuffin!

### ON EXHIBITIONS (a) AT HOME

The Mexican Exhibition has arrived at the R.I.B.A. and is now open. It will close on May 2 and will reopen at the Building Centre on May 5, remaining there until the 14th.

The R.I.B.A. exhibition, "The Architect and Industry"—recently shown at the factory equipment exhibition—is now on view at the B.C., and will remain there until April 30. A general view of this exhibition appeared on this page two weeks ago. It was the R.I.B.A.'s first venture into the trade exhibition world, and a very good effort, too. I hope we shall see many more on the same lines. I am told that quite a number of serious enquiries were made at the stand. The exhibition was designed by Kenneth Bayes. In connection with the exhibition the R.I.B.A. has published a leaflet, "The Architect and Industry."

### (b) ABROAD

The Building Centre is producing and financing for the U.K. committee of the I.U.A. the British contribution to the exhibition on Housing, 1945-55, to be held at the Hague in July in connection with the 6th I.U.A. Congress. The exhibition is being designed by Messrs. Cassidy, Farrington and Dennys, A./A.R.I.B.A., in conjunction with the B.C. from material selected by the U.K. Committee of the I.U.A. The exhibition will have a pre-view at the B.C. from May 18 until June 4.

### SCAFFOLDING THEN AND NOW

My picture shows part of the Monument, which is being cleaned. The metal tubular scaffolding contrasts with the timber scaffolding to the building in bas-relief. The architect, centre, is seen ordering off the scantily clad wife of an unsuccessful tenderer while the quantity surveyor, wearing jewelled crown, and long-haired architectural assistant, who had privily brought the lady a wreath of flowers, stand aghast. The lady's brother—or is it her sister?—is about to do the architect in. Floating in mid-air is a cloud full of witnesses. Although it is clear from the group in the top right-hand corner that it is the tea-break, a bricklayer's labourer is seen carrying a hod of bricks at first-floor level. The accusing finger of an official of some kind can be seen in the lower part of the cloud.

### SOIL MECHANICS: THE LATEST

It is a little difficult to take seriously a scheme for making roads and building blocks out of fruit juice, sunflower seeds, apple cores and/or jam. That it can be done at all is quite remarkable enough. That anyone should actually propose to do it is too much. It is perhaps less surprising that Mr. H. J. Brooke-Bradley, retired deputy surveyor of Worcestershire County Council, should have had to struggle with "sceptical colleagues" than with "vested



interests." Jam and fruit juice producers would, I should have thought, flock to the support of anyone proposing to use their products in such a prodigal fashion. Of the supply of sunflower seeds I can only say that Mr. Brooke-Bradley will be competing with half Asia and the whole Indian sub-continent, where they are much chewed. Since on roads made in this way the traffic itself acts as a roller, it can hardly fail to produce more of that already plentiful commodity—traffic jam.

### THE BUILDING EXHIBITION AND SOHO

My first news of the Building Exhibition, which opens on November 16, is that the centrepiece of Messrs. Pilkington's stand will be a 9ft x 9ft model of the Soho scheme. Talking of Soho, have you heard that there is to be a Soho Festival this summer? I have no details but we may

expect the buildings to be festooned with spaghetti, tagliatelli, vermicelli and old cinema film. The streets to be paved with mousraka, ossobouco and broken movie contracts, and chianti to run like café expresso. Let us hope that the Wendy House in Soho Square will be used as the centre piece of a bonfire and its place taken by a

group of statuary representing Messrs. Jellicoe, Edward Mills and Arup dressed as gondoliers rowing in a glass-bottomed boat down a glass-bottomed upper level Greek Street (see the Soho scheme), while a hidden loudspeaker plays the appropriate overture by Sullivan.

ABNER

## NEWS OF THE WEEK

### The Post of City Architect for London

The City Corporation is inviting applications from Members of the Royal Institute of British Architects for the new whole-time appointment of City Architect at a salary between £3,250 and £3,500 per annum according to qualifications and experience. The City Architect will advise on the exercise of planning powers in the reconstruction and redevelopment of the City of London, and be in charge of all architectural services of the Corporation. Full particulars of the office and forms of application from E. H. Nichols, Town Clerk, 55/61, Moorgate, London, E.C.2; completed applications to be returned by May 9.

Not more than five candidates will be selected by the Officers and Clerks Committee, and their names will be submitted for final election by the Court of Common Council. The selected candidates, if not already Freemen, must take up the Freedom of the City by redemption, at a cost of £3 3s. Extracts from a report presented to the Court of Common Council by the Officers and Clerks Committee is given below.

The Conference of Deputations of City Lands, Bridge House Estates, Improvements and Town Planning, Officers and Clerks and Special Committees, which met on September 24, 1954, having considered the existing distribution of surveying, engineering, architectural and planning duties among the departments of the Corporation, and in particular the employment of a number of qualified architectural assistants in different departments, asked the Improvements and Town Planning Committee for their views on the Corporation's architectural services. That Committee considered that it would be desirable to have expert opinion on the advantages and disadvantages of appointing a City Architect, and accordingly obtained a Report from Sir Lancelot Keay, K.B.E., a former President of the Royal Institute of British Architects, and Sir William Holford, a former President of the Town Planning Institute.

This Report advised "In Principle, and certainly for the future, the soundest recommendation we can make is the appointment of a City Architect to take over central responsibility for all architectural work and architectural advice in the various departments of the Corporation; leaving the functions of the City Engineer, and of Estate Manager and Valuer, to be exercised by independent departments," and the Improvements and Town Planning



Factory for Electronic Instruments Ltd., at Richmond, Surrey. Architect: Kenneth Anns, M.C., F.R.I.B.A., consulting architect: A. B. Waters, M.B.E., G.M., F.R.I.B.A. This building which was erected in thirty-four weeks, will be illustrated in detail in a later issue

Committee expressed the opinion that a City Architect should be appointed to be responsible for all architectural work to be undertaken on behalf of the Corporation, together with the control and direction of the City Planning Office, at a salary which would ensure the appointment of an officer of eminence and experience. The above-mentioned Conference, having met again on March 24, 1955, concurred in this view and recommended to the Officers and Clerks Committee that a City Architect be so appointed.

Since the submission in 1947 of their Final Report on Reconstruction, Dr. C. H. Holden and Sir William Holford have been retained as consultants to give advice and assistance to the Improvements and Town Planning Committee on architectural and town planning matters generally. On February 4, 1954, your Honourable Court approved an arrangement for the services of the consultants to be available to that Committee on an extended basis for an experimental period of twelve months from February 1, 1954. In view of the special and urgent task which it is proposed should be undertaken by Sir William Holford on the preparation of a scheme for St. Paul's Precinct, this arrangement has not been renewed, and it is therefore a matter of the utmost urgency that alternative arrangements should be made to enable the Improvements and Town Planning Committee to continue to have the benefit of the advice and assistance of an Architect of eminence and experience.

The prime responsibility of a City Architect in the immediate future would therefore be the control through planning powers of aesthetics and design of new buildings in the city, and liaison with the

officers of the Ministry of Housing and Local Government and other Government Departments, of the London County Council, and the Royal Fine Art Commission. He would also be required to have charge of those architectural services now performed in several departments, on which no less than eleven qualified architects are at present employed, largely under the control of members of other professions. It will be essential for the new City Architect to work with the City Engineer and the City Surveyor as members of a team.

In due course the City Architect would be responsible for the services which have hitherto been performed by architects engaged from time to time on special projects. Since April 1, 1949, over £90,000 has been spent on architects' fees, and although there are some specialized works which might demand the engagement of outside architects, a City Architect should be able to undertake a large part of this work. The Committee recommend:—

(a) that a Fellow of the Royal Institute of British Architects be appointed City Architect for the purposes set out in this Report;

(b) that the salary of the office be between £3,250 and £3,500 per annum, according to qualifications and experience;

(c) that the appointment be advertised;

(d) that no age limit on candidates be laid down;

(e) that the appointment be made subject to annual election, to all Standing Orders of the Common Council, to the scheme relating to the payment of sickness allowances approved on March

10, 1949, and to contribution to the Corporation of London Superannuation Fund;

(f) that the City Architect shall not, directly or indirectly, be engaged in any other business or occupation, nor shall he be at any time engaged in the promotion or direction of any public or private company, nor engage in the transaction of professional business for or on behalf of any parties other than the Corporation, but shall devote the whole of his time and attention to the duties of his office;

(g) that the City Architect shall pay to the Corporation any fees received by him in respect of his services;

(h) that it be referred back to the Officers and Clerks Committee to select a number of candidates not exceeding five, and submit the names for final election by the Court after such candidates have been medically examined; in accordance with the Order of the Court of December 15, 1949, relative to the election of officers;

(j) that the Committee be authorized to co-opt any members of the Court of Common Council for the purpose of the reference.

When the appointment of a City Architect has been agreed upon, it will be possible to proceed with the re-arrangement of the duties of the Surveyor's Engineer's and Planning Offices; but it is anticipated that such a review will take several months to complete, and it will therefore be necessary for the existing Establishments of the Surveyor's Office and City Planning Office to be extended beyond April 1, 1955, the date on which they are due for review, for a period not exceeding one year and the Committee recommend accordingly, and further, that they be authorized to re-allocate the positions in the existing Establishments, pending the submission of revised establishments.

### Builders' Function : Southampton

The Mayor of Southampton, Alderman P. R. H. Hammond, replying to the Civic Toast, proposed by Mr. H. K. G. Knight, President of the Association, at the annual dinner of the Southampton and District Association of Building Trades Employers, said that provided we had peace, he was certain that in ten to 15 years there was a great future for the industry.

There was a growing desire for light industries and factories to come to the Southampton area. In the New Docks, on the Millbrook trading estate, Standard Cables were already erecting a factory. Messrs. Mullard also desired to have an extensive factory there, and there were numerous enquiries for sites in the town. Within the next year or two the Millbrook estate would be completely built upon.

It was now no secret that the Corporation were having a survey of the Northam area, and it was hoped that within the next two or three years the area would be completely replanned so that additional land could be found for further light industries.

In view of the development of industry in the town he said that in the foreseeable future the population would swell to a quarter of a million.

These developments meant that they must have more houses, and the only solution seemed to him (and he was speaking as an individual and not as Mayor) to have satellite communities beyond the green belt. It was absolutely essential for most of the green belt to be maintained because it was impossible to build on certain areas, including the New Forest.

In addition to the Northam scheme, there was the lower part of the town where some of the few surviving slums still existed. That had now the active consideration of the Corporation and he believed it was the aim to build flats on these sites, probably five to eight storeys high.

Proposing the toast, the President said this must be a unique occasion as, in addition to being Mayor of Southampton, Mr. Hammond was a much honoured and respected past president of the Building Association, and one who had given much time to its service.

It was now Government policy, he said, that private housing development should form an increasingly large part of the country's housing requirements.

The builders of Southampton, having survived at last building licensing and material shortages, were finding it extremely difficult to secure suitable building land to implement the new policy.

He, personally, wondered whether planning decisions which had been made to encircle our towns with green belts were such a good thing as at first might have appeared.

Although he would agree that some limit must be imposed on the spread of large cities, he found that in restricting the growth of a town and premier port such as Southampton, which was partly bounded by sea and river, and had a growing population and consequent prosperity, a stalemate would be reached.

Providing ample provision was made for open spaces within these areas he could see no advantage in retaining the green belt round the town.

"Many of us," he said, "have lost our land by compulsory purchase orders. Government approval has now been given for Corporation land to be re-sold."

"I feel that Southampton Corporation should now carefully review its land holdings, and should, in any way possible, assist by re-selling to private developers."

"The Corporation might even go a step further and consider providing roads and main services on large sites where the initial costs may be too high to be undertaken by any one local contractor, and re-sell in smaller sections."

Certain land suitable for building was now zoned for other purposes, and in view of Southampton's growing population there was a case for it to be re-zoned for housing. Should the Corporation decide to make application to the Ministry for re-zoning he could promise the full support of the Association.

### News in Brief

On April 13, H.R.H. Princess Margaret laid the foundation stone of the new church of St. John, Newbury, which replaces the building destroyed by bombing in 1943. The architect is Mr. S. Dykes Bower, F.R.I.B.A., who explained the plan of the new church to the Princess.

At the Coal Utilization Council's annual Convention at Eastbourne this week, a paper was read by Mr. David Booth, F.R.I.B.A., on "Designing Houses to Make the Most of Solid Fuel."

Mr. Ernest Scadding, A.R.I.B.A., is to stand as a Conservative candidate for the Weoley Ward at the Birmingham Municipal elections in May.

Mr. Graham Pegg, A.R.I.B.A., has resigned his post in the Great Yarmouth Schools Architect's Department to enter private practice.

Mr. L. A. Leaver, M.T.P.I., M.I.Mun.E., Deputy County Planning Adviser, Essex County Council, has been promoted County Planning Adviser in succession to Mr. F. Longstreth Thompson, O.B.E., F.R.I.C.S., A.M.I.C.E., P.P.T.P.I., who is retiring on May 1.

### EXHIBITIONS

April 18-29. Exhibition of photographs and drawings by Richard Neutra, arranged by the Society of Student Architects at the Polytechnic, Little Tichfield Street, W.1. Mon.-Fri., 10 a.m.-5 p.m.

Till May 2. Exhibition of Mexican Architecture at The Royal Institute of British Architects, 66, Portland Place, W.1. Mon.-Fri., 10-7; Saturdays, 10-5.

April 22-June 30. Display of recent German furnishing fabrics and wallpapers at the Victoria and Albert Museum. This is the second in a series of displays of contemporary foreign fabrics and wallpapers which began with a selection of American designs in December last.

### COMING EVENTS

#### Royal Institute of British Architects

April 25 at 6 p.m. Meeting of the Library Group. Dr. Helen Rosenau will introduce an evening on "The Scope and Limits of Vitruvian Influence in Town Planning." At 66, Portland Place, W.1.

#### Royal Engineers Association

April 30 at 7 p.m. to 11 p.m. The Third London Sapper Reunion will be held at The Duke of York's Headquarters, Chelsea, S.W.3. Tickets obtainable from: Hon. Secretary, R.E.A. London Group, 31, Horse Guards, Whitehall, S.W.1, R.E. Association, 43, Denison House, 296, Vauxhall Bridge Road, S.W.1, and C. G. Mathews, R.E. Benevolent Fund, 29, Thurlow Street, S.W.7.





General view of the Weir Hall

## ***New Lecture Hall: Institution of Naval Architects***

ARCHITECTS: ARTHUR W. COOKSEY & PARTNERS

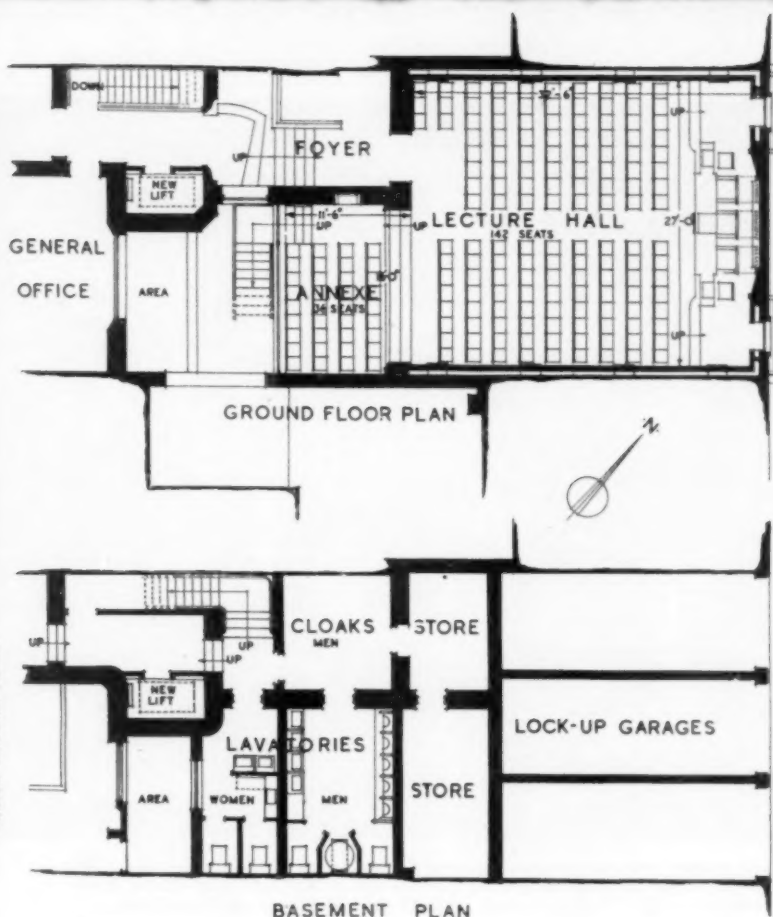
THE I.N.A. moved into its present premises at 10, Upper Belgrave Street in 1938. The property included a house at the back of Wilton Mews which was demolished by a bomb in 1940, when the main building was considerably shaken. After deliberations on whether it would be more economical to replace the existing premises or find other accommodation, it was decided to retain and modify, and the Institution's architects submitted a scheme in which by using the empty bomb site, a lecture hall and other improvements could be provided. This was approved by the Council of the I.N.A. in 1950. All the work was to be undertaken in conjunction with war damage repairs to the main building.

Subsequently Viscount Weir of Eastwood, an Hon. Vice-President of the I.N.A. made a donation of £10,000, which was used in particular to help defray the cost of the new lecture hall, which has been named after the donor. In addition, a number of well-known shipbuilding firms and organizations contributed equipment and embellishments to the lecture hall.

Among these are stone panels symbolizing respectively the science and the art of shipbuilding carved by Mr. James Woodford, R.A. (the well-known sculptor of the Queen's Beasts), presented by Lloyd's Register of Shipping; a fabric panel as a background to the dais, designed by Mr. A. H. Williamson, A.R.C.A., and symbolizing ship lines and construction, presented by Messrs. Yarrow & Co., Scotstoun; a grant of Arms to the Institution and a carved representation thereof by Mr. Woodford on the centre panel of the dais,

presented by Messrs. John Brown & Co. (Clydebank), Ltd.; presidential chair and reading slope by the British Corporation Register together with two flanking chairs by Mr. Gilbert Innes (Associate Member of Council). Further gifts include a fine carved panel in the lecture hall approach lobby inscribed with the names of the Presidents of the Institution, presented by Messrs. R. & W. Hawthorn Leslie & Co., Ltd.; a specially designed reading lectern for speakers at meetings, presented by the Royal Corps of Naval Constructors; a control panel operated from the dais for the lighting, heating and ventilation of the hall, by Messrs. Brown Brothers & Co., Ltd.; an electric clock, by Messrs. John I. Thornycroft & Co., Ltd.; cinema projector equipment, by Messrs. J. Samuel White & Co., Ltd.; lantern, epidiascope and slide projector, by Messrs. Rowan & Boden; a revolving and illuminated globe of the world, by the North Eastern Marine Engineering Co., Ltd., and a carved presidential hammer and casket, by the Fairfield Shipbuilding & Engineering Co., Ltd. On the exterior wall of the hall in Wilton Mews will be found "suspended" from the roof line one of the original Adams decorative stone features from the façade of the Adelphi Building (where the Institution was housed for over half a century). This was saved by Mr. R. W. Dana, O.B.E., M.A. (Secretary of the Institution from 1901 to 1935) during the demolition of the Adelphi and presented to the Institution a few years ago. His successor to-day suggested its incorporation somewhere in the new building to commemorate the Institution of Naval Architects' former association with the Adelphi, and the architect has worked it in accordingly.





## WEIR LECTURE HALL

Architects: Arthur W. Cooksey and Partners

### Building Contractors:

Messrs. William Lay & Co., Ltd.

### Quantity Surveyors:

Messrs. Wood & Weir, F/R.I.C.

### Consulting Engineer:

Geoffrey Palmer, Esq., M.I.Struct.E.

### Sub-Contractors:

Paneling: Samuel Elliott & Sons (Reading), Ltd. and William Lay & Co., Ltd. Cork floor tiles: Semtex, Ltd. Vinyl floor tiles: Semtex, Ltd. Lift: J. & E. Hall, Ltd. Electrical installation: Drake & Gorham (Contractors), Ltd. Thermodaire heating units: Drake & Gorham (Contractors), Ltd. Ventilation: Colt Ventilation, Ltd. Wall glaze: Robb's Cement Enamel Finishes, Ltd. Bronze metalwork: Luxfer, Ltd. Roof light: J. A. King & Co., Ltd. Projector screen: The Perforated Front Projection Screen Co., Ltd. Black-out blinds and curtains: Hall & Dixon, Ltd. Acoustic ceilings: May Acoustics, Ltd. Escape staircase, etc.: Light Steelwork (1925), Ltd. Carved inscription panels: E. J. & A. T. Bradford, Ltd. Terrazzo: Art Pavements & Decorations, Ltd. Suppliers:

Sanitary ware: Stitsons Sanitary Fittings, Ltd. Door furniture: Yannedis & Co., Ltd. Garage door gear: E. Hill Aldam & Co., Ltd. Facing bricks: Freshfield Lane Brickworks. Exterior stone-work: W. Benfield & Son. Interior stone-work: J. Whitehead & Sons, Ltd.

## Notes from the Minutes of the R.I.B.A. Council Meeting Held on April 5

### Village Halls.

The President wrote to the Minister of Education in regard to the building of village halls with the aid of subsidies to be provided by the Government, and drew attention to the importance of good design and quality. He asked the Minister to consider the advantages of employing qualified architects for this work.

The following reply has been received from the Minister, and is published with his consent:—

"I have been looking into the problem of village hall design which you mention in your letter of February 7.

"I quite agree with you that we should all strive to ensure that the villages achieve good standards of design, and that this is more likely to be achieved if qualified architects are employed. Sound advice in the early stages of the preparation of a scheme is also important, and I am glad to know that something is being done to provide this. The National Council of Social Service, with whom the Ministry co-operate very closely in dealing with village halls, issued two pamphlets last year, one on the site and building, and the other on the interior. They are also issuing a

revised version of their 'Notes of Construction' which have been brought up to date. The Ministry's architects can help too, since arrangements have been made for them to see plans at an earlier stage than was often possible in the past. Finally, all applications are sent to the Ministry through Local Education Authorities and I hope that they will do their best to assist the local Village Hall Committees to achieve good standards."

### Exhibitions.

The following exhibitions are being prepared:—

(a) *Drawings of the late Cyril Farey.*

To be shown in the Members' Room for a period in the autumn. The dates have yet to be fixed.

(b) *Ministry of Works Exhibition on Architectural Methods applied to the Preservation of Ancient Monuments and Historic Buildings.*

To be arranged jointly with the R.I.B.A. and to be shown at the R.I.B.A. for a fortnight during December, 1955.

(c) *British Electricity Authority's Exhibition on Pulverized Fuel Ash Building Products.*

An exhibition to illustrate architectural aspects of the utilization of waste products from power stations in the form of building materials will be shown at the R.I.B.A. for a period in October, 1955. The exhibition is being

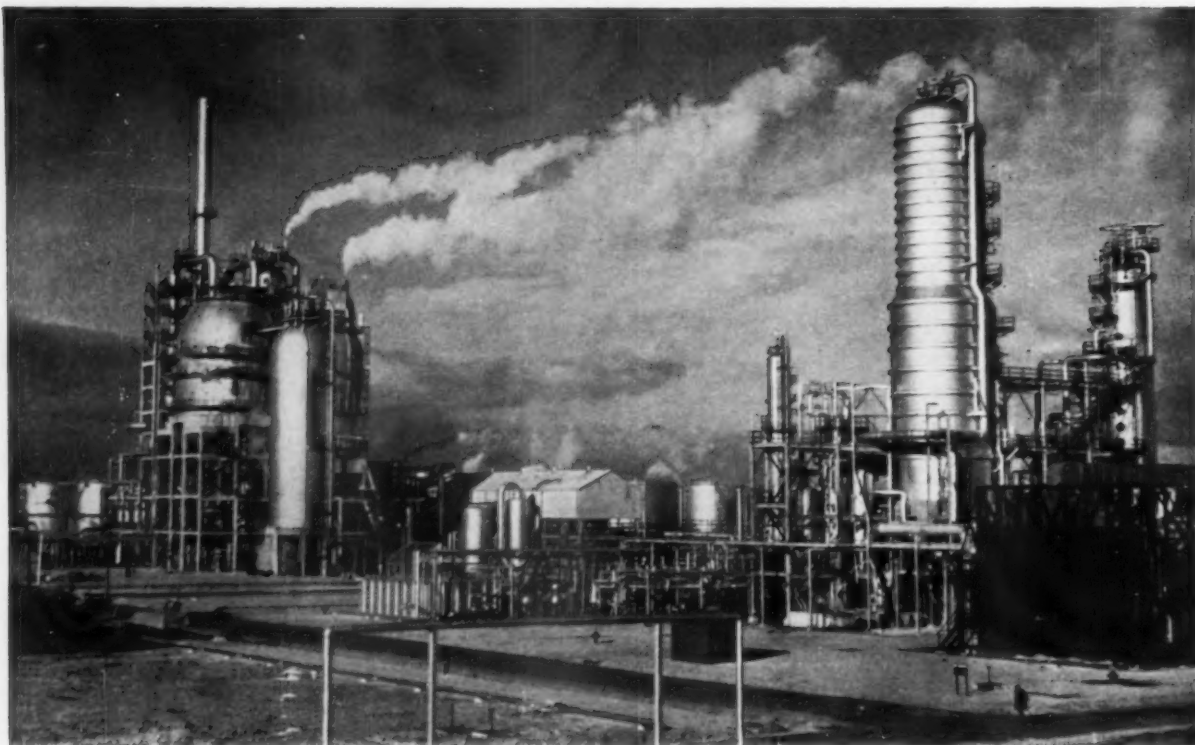
prepared by the British Electricity Authority in consultation with the R.I.B.A. and the B.R.S.

### British Architects' Conference, 1957.

The Council accepted the invitation of the Berks, Bucks and Oxon Architectural Association to hold the British Architects' Conference in 1957 at Oxford on July 10-13, 1957.

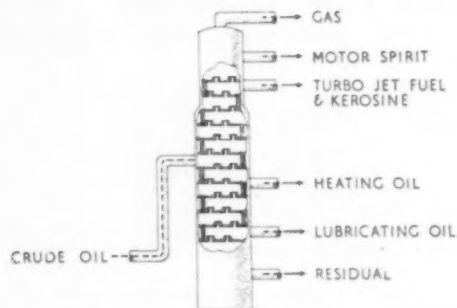
### Proposed London Society of Private Practising Architects.

A proposal to form a London Society of Private Practising Architects was reported to the Council. After full consideration of the matter, the Council decided that such a proposal was to be deprecated. The view was expressed that the profession must be regarded as a single entity composed of members whose ultimate interest in the advancement of architecture are identical, and that any move which might give Government authorities and the public generally an impression of divided counsels is unwise and likely to impair the influence of the profession when making representations on matters of importance. They consider that the R.I.B.A. and the Allied Societies provide adequate machinery for the discussion and solution of all problems which may arise, and they deplore the tendency of a minority of members to take up membership of other bodies, especially those which require no qualification by examination for admission to membership.



Esso Petroleum Company's 37½-million pound refinery, Fawley. This view shows a 'Catalytic' Cracking plant, left, with two-stage crude unit, right. Heat Exchangers are shown centre foreground with the pipe-still furnace extreme right. It is the largest refinery in the U.K. with a throughput of 6,500,000 tons of crude oil a year. Products include 1,500,000 gallons of motor spirit every day

## Oil Firing of Central Heating Boilers



By C. A. ROAST, A.M.I.Mech.E., A.M.I.E.E., M.Inst.F.,

Technical Department, Esso Petroleum Co.

**M**ANY factors govern the choice of the most suitable method to be adopted for a central heating system, but the heating engineer usually depends upon some particular type of boiler as the main source of heat supply. The calculations for heat losses, air changes, radiator sizes and water flow rates will, no doubt, be based upon sound technical principles and although a reasonable margin of surplus is normally allowed, the success of the entire heating system will depend upon the actual boiler performance.

Twenty years or more ago, coal or coke supplies of the desired grade were plentiful and relatively cheap, there

was labour surplus to national requirements and any element of doubt regarding boiler performance could be resolved by a little generosity in respect of the installed rating. These conditions no longer prevail; coal is not plentiful in supply and as many of our best coal seams have been completely exhausted a general deterioration in quality must be expected. The gas industry in particular has been affected by the shortage of those special grades of coal upon which much of its plant is dependent for the efficient production of town's gas; the quality of coke is similarly affected.

The current labour situation in this country now makes

the hand firing of boilers a very expensive business and it is often found that after a reasonable degree of competency has been achieved, stokers or firemen prefer to work the more regular hours at higher rates of pay offered by industry, than in the basement of a block of flats or offices. The combination of unstable coal or coke supplies together with current labour difficulties is neither conducive to the efficient utilization of fuel nor continuity of good service from any central heating system. The installation of mechanical stokers solves some of the current problems but unless the correct grade of fuel is forthcoming the plant cannot operate at the designed efficiency.

It therefore becomes apparent that the most satisfactory fuel for any central heating system must be constant in quality, independent of manual labour for its application, clean and easy burning, ash free and low in cost.

Electricity, gas and oil fulfil most of the desired characteristics but all three are more expensive on a delivered basis than coal or coke. Solid fuel, however, is neither ash free nor independent of labour for its usage and few are able to obtain regular supplies of suitable grades.

Delivered costs of the various forms of fuel or heat energy will vary according to the locality and the annual quantity involved. The following table may serve to illustrate probable costs in the South of England.

Cost per therm of various fuels at 100 per cent efficiency (one therm—100,000 B.Th.U.s.)

	Pence
Electricity at 1d per unit .. .. .	29.2
Gas at 1s 6d per therm .. .. .	18
Coal at £6 5s per ton (11,500 B.Th.U.s./lb) .. .. .	5.6
Coke at £6 per ton (11,500 B.Th.U.s./lb) .. .. .	5.4
Heating oil (35 seconds) at 1s 2½d per gallon .. .. .	8.5
Medium oil (200 seconds) at 10½d per gallon .. .. .	6.2
Heavy oil (950 seconds) at 9½d per gallon .. .. .	5.5

Table 1

There is no doubt whatsoever that coal or coke is the cheapest fuel when considered entirely on its delivered cost. Unfortunately it is necessary to transform the heat from whatever fuel is adopted into a medium whereby it can be utilized for a specified purpose. In this process losses are automatically incurred and therefore the delivered cost can create a false impression. The main concern is useful cost. The following table illustrates this point and whilst not entirely accurate can serve as a guide to the actual fuel costs for the central heating of a building. Labour and ash removal costs are not included.

	Efficiency per cent	Pence
Electricity at 1d per unit, open fires .. .. .	100	29.2
Gas at 1s 6d per therm in boiler .. .. .	80	22.2
Coke at £6 5s per ton in boiler .. .. .	60	9.3
Coke at £6 per ton in boiler .. .. .	60	9.0
Heating oil at 1s 2½d/gallon .. .. .	75	11.3
Medium oil at 10½d/gallon .. .. .	75	8.0
Heavy oil at 9½d/gallon .. .. .	75	7.3

Table 2

From the above table it is obvious that whilst electricity and gas can be applied very efficiently their actual costs are twice those of any other form of fuel.

Even if a solid fuel boiler is fitted with mechanical

handling equipment labour is essential to fill the hoppers and remove periodically the ash and clinker formed; thus our total solid fuel charges may be higher than those shown.

Electricity and gas are clean burning fuels and labour can be dispensed with in their actual usage, fuel oil burning installations have similar characteristics.

In this country there are many fully automatic oil-fired cast-iron sectional heating boilers that have been operating very satisfactorily over the past twenty-five years. It must be admitted that the efficiency of these units is not up to present standards but, nevertheless, they are giving good



#### GAS & FUEL OIL ZONES AND PRICES

Grade	Inner Zones	Outer Zones	General Zones
Heating Oil	1/2½d.	1/2½d.	1/3½d.
Medium Fuel Oil	10½d.	11½d.	11½d.
Heavy Fuel Oil	9½d.	10½d.	10½d.

All prices are per gallon, delivered to customer. Special Zone prices vary according to the locality, but are higher than those which apply in the General Zones. All the above prices are for 500 gallon lots and upwards by Road Tank Wagon, Rail Tank Car (full loads) or Tank Barge (full loads). For quantities of 100/499 gallons a premium of 1d per gallon is charged. Minimum delivery by Road Tank Wagon is 100 gallons.

## Oil Firing of Central Heating Boilers

service and are capable of many more years useful performance.

Oil firing is certainly not a novelty, it is a well-proved method of firing boilers and many types of furnaces.

### Grades of Fuel Oil

Three grades of fuel oil to cover central heating applications are now being marketed in this country for inland usage and most are derived from Middle East crudes. Typical tests of these fuels are given in the following table.

	No. 1	No. 2	No. 3
Specific gravity at 60° F .. .. .	0.830	0.940	0.960
Closed flash point P.M. °F .. .. .	166	200	+200
Viscosity, Redwood No. 1 at 100° F .. .. .	33	175	850
seconds .. .. .	Neg	0.1	0.2
Water, percentage vol. .. .. .	0	10	15
Pour point, °F .. .. .	Neg.	0.02	0.03
Ash, percentage wt. .. .. .	Neg.	0.02	0.02
Sediment, percentage wt. .. .. .	19600	19000	18700
Gross cal. val. B.Th.U.s/lb .. .. .			

Table 3

Whereas Nos 2 and 3 are blends of residual to defined viscosity limits the first grade is a distillate and most suitable for fully or semi-automatic firing of central-heating boilers within the range of 40,000 to 500,000 B.Th.U.s output per hour.

The residual fuels are more viscous than distillate grades and require preheating. This preheating cost is negligible and more than offset by the additional heat units in each gallon and the lower schedule price. Where possible, residual fuels should be used for central heating but there is a lower limit to observe and is governed by the size and type of boiler and burning equipment involved.

### Delivery of Fuel Oil

The normal method of bulk delivery is by a Road Tank Wagon and vehicles up to 3,000 gallons capacity are used for this purpose. The minimum bulk delivery at schedule price is 500 gallons, but special deliveries of quantities from 100-400 gallons can be arranged on payment of an extra charge.

The vehicles normally have discharge facilities to meet heads up to 40ft and also carry a 40ft length of hose to connect to the fitting of the consumers storage tank.

### Storage Tanks

The tank size will depend entirely upon the estimated rate of oil consumption and the space available. Its capacity should prove sufficient to cover not less than two or three weeks of winter heating requirements.

Tanks of mild steel plate of welded construction are recommended but under no circumstances should galvanized equipment be used for fuel oils. Whilst preference should be given to cylindrical construction it is often an advantage to make use of any limited available space and weld on site a rectangular unit (Construction Reference B.S.S. No. 799). Before commissioning, tanks should be thoroughly cleaned internally and pressure tested.

The standard fittings for a storage tank consist of a filling pipe with a union suitable for connecting to the oil company's delivery hose, a vent pipe, an off-take connection for supplying the burner with fuel, an aperture for a dip-stick, if an oil level gauge is not being fitted, and finally a drain cock (see Figure 1). When the tank is to be located within a basement, the vent pipe and filling connections should be extended to a point outside the

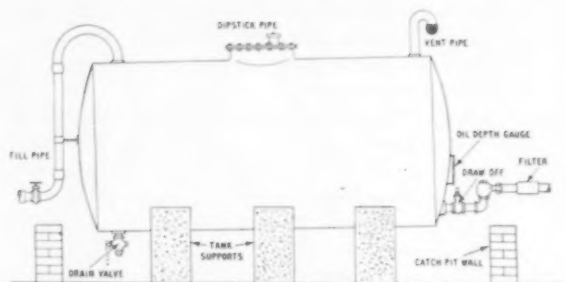


Figure 1. Fuel oil storage tank

building. It is customary to install the tank above floor level upon two or more brick piers and allow for a slight inclination away from the burner supply pipe. The object of this inclination is to segregate and facilitate the removal of any water or foreign matter that enters the tank.

### Oil Burners

The range of applications covered by the various types of oil burners manufactured in this country is very wide indeed and a series of articles would be necessary to provide all the details involved. As the range covered by central heating boilers is probably from 20,000 B.Th.U.s/hr for the very small house to units of 3,000,000 B.Th.U.s/hr for the very large installations a little guidance on suitable types of burning equipment and grades of fuel oil may be justified. It is suggested, however, that the burner manufacturers and the technical departments of the major oil companies are available to give advice and should be consulted when doubts arise on any new project.

For a private house with a boiler rating of between 40,000 and 100,000 B.Th.U.s/hr a distillate grade of fuel oil should be used. Forced draught vaporizing burners are available and capable of providing excellent service. They are of the semi-automatic type and after the initial lighting, can operate thereafter continually with a varying length of flame as desired. Provided they are cleaned at regular intervals, trouble-free service over long periods is normally experienced. This type of burner is very popular indeed in America and Scandinavia on account of its low initial cost and simplicity of operation.

Medium Air Pressure Burners also are adaptable to the smaller-sized boiler and operate very satisfactorily indeed down to half a gallon of fuel per hour (boiler output of 50,000 B.Th.U.s/hr).

The next in boiler size is from 100,000 to about 450,000 B.Th.U.s/hr. A distillate grade of oil is generally



used and the choice of burning equipment is much wider. Gun type fully automatics (see Figure 2) Rotary Cup, or Medium Air Pressure burners are all suitable and each type is capable of providing a high standard of performance.

For boilers above 500,000 B.Th.U.s the 200 seconds grade of oil is recommended on account of its lower price. The additional oil-heating equipment cost will be quickly repaid by the saving achieved. (For boilers in excess of 1,500,000 B.Th.U.s/hr the possible use of a 950 seconds grade of fuel may justify careful consideration.) Here again the choice of burner will be governed by the desired method of operation. Pressure Jet Gun Type burners will lend themselves to very efficient fully automatic operation and after the initial setting of thermostats for the desired temperature conditions within the building the equipment will provide the required service without any manual attention whatsoever. Rotary Cup type burners are also fully automatic in operation principles and capable of a high degree of fuel efficiency.

Medium and Low Air Pressure burners normally work on a high/low flame cycle, i.e., after the torch has initially been applied the unit operates continually with a varying length of flame according to the heating demand from the central heating system. The type of flame produced by these burners is very stable indeed and they are capable of handling all grades of fuel oil.

#### General Considerations

Where distillate grade of fuel oil is to be used no preheating whatsoever is necessary. The oil can be stored and by employing suitable equipment burnt successfully at atmospheric temperature.

To ensure continuity of oil flow during severe winter conditions it is recommended that provision is made for heating the residual grades of fuel. The storage tank temperature for 200 seconds' fuel should not be allowed

to drop below 45° F and for 950 seconds' fuel the minimum should be 80° F.

Atomizing or burning temperatures of the residual grades will depend upon the type of oil burner employed and is normally shown on the burner manufacturer's instruction card.

When ordering an oil burner full details of the type of boiler involved and desired grade of fuel should be submitted to the burner manufacturer, such information will enable him to ensure that the most suitable unit is being purchased. Sometimes catalogues illustrate burners with specified hourly outputs of B.Th.U.s some misunderstanding can be created in this respect because the probable boiler efficiency has not been included. A burner with a rated consumption of 3 gallons per hour indicates a heat release of about 510,000 B.Th.U.s after allowing for an overall efficiency of 75 per cent the useful output of the boiler will be 382,000 B.Th.U.s. A little careful thought will thus eliminate the possible fitting of too small a burner.

There are few if any mechanisms, that will operate trouble free without some form of inspection and service. An oil burner is a willing and very efficient servant but it needs annual inspection of rate of wear on moving parts and possible cleaning of the filters. The burner manufacturers have service departments specially engaged on this work and most are willing to enter into a regular service agreement.

It is recommended that the prospective user should make arrangements with an oil supplier as soon as a decision has been made to use liquid fuel. The oil company normally arranges for a representative to make an early call and advise how deliveries will be made. On his initial visit he will ensure that suitable facilities are available for delivering the oil and he will also provide whatever general advice is required.

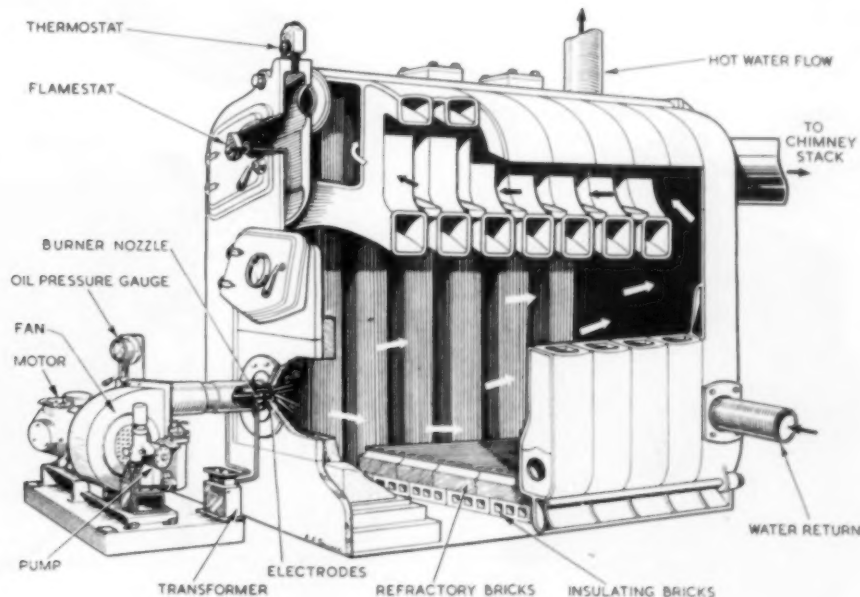
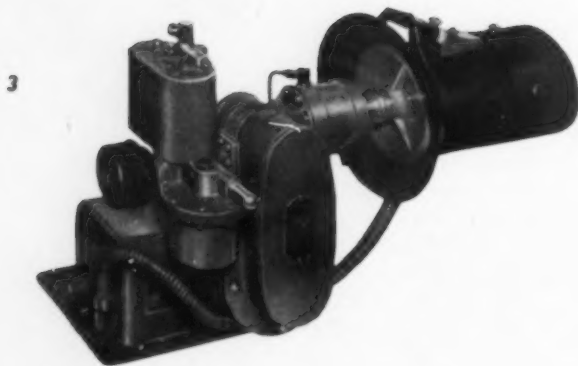


Figure 2. Oil-fired cast iron sectional heating boiler

## Fully Automatic Burners



1. A fully automatic pressure-jet burner, Type A, by Hope's Heating and Engineering Ltd., range 65,000 to 165,000 Btu/hr.

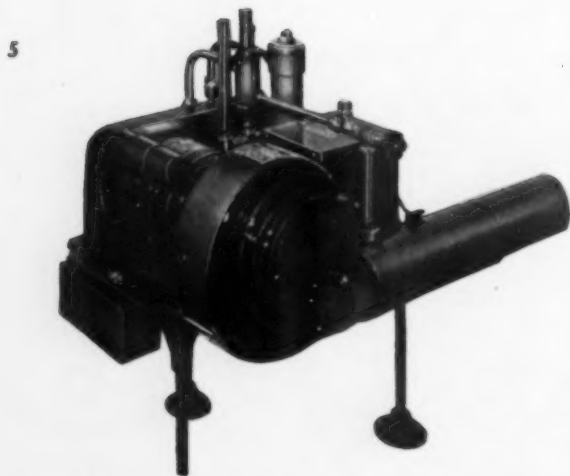
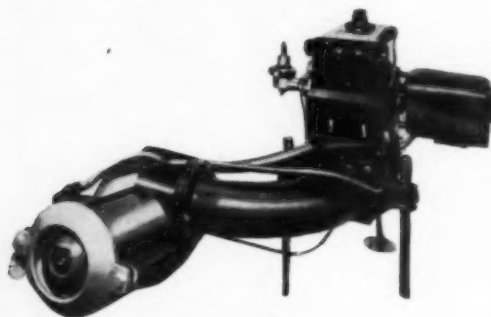
2. Forced draught vaporizing burner for small boilers, The Swirlamiser, by Auto-Combustions (London) Ltd., range 20,000 to 120,000 Btu/hr.

3. Fully automatic air-atomizing burner, by Shorrock Superchargers Ltd., range 60,000 to 300,000 Btu/hr.

4. A fully automatic pressure-jet burner, the Electromatic (TU), by G. C. Pillinger & Co. Ltd., range 250,000 to 700,000 Btu/hr.

5. A pressure-jet burner, fully automatic, the Quiet May, by May Oil Burner (England) Ltd., range 130,000 to 850,000 Btu/hr.

6. The Samoa, a fully automatic air-atomizing burner by Franglo Products Ltd., range 30,000 to 200,000 Btu/hr.



## BURNER INFORMATION

In the following table are given under the names of a representative list of manufacturers the trade names of their products, and the respective performances. Output is shown in thousands of B.Th.U./hr., these ratings are usually assumed to be 70 per cent of the total output. The type of fuel is given as a figure denoting the viscosity as so many seconds Redwood No. 1 at 100° F. The fuel consumption given is at maximum running and is shown in Imperial gallons/hr. In the electrical supply column the letters S.F.P. stand for switch fuse point. Figures denoting Kilowatts (kW) refer to preheater loadings for those burners using the heavier fuel oils. A full list of names and addresses appears on page 483.

Name and Trade Name	Model	Output '000 B.Th.U.	Fuel Type	Consumption galls/hr.	Details of Electrical Loading and Supply	Remarks	
ASHWELL & NESBIT LTD. "Vortex"	V	250	35	0.75-2.5	200-250 Volts	By the makers of the Iron Fireman solid fuel stoker	
ASSOCIATED BRITISH COMBUSTION LTD. "Pyrojet" "Thermo"	II 4"	80-200	70	1.75	230/250 V. 50 cycles 1/15 amp. S.F.P.	Special jets fitted to suit rating of particular boiler D.C. can be used as an extra	
	II 5"	200-400	70	4			
	—	20-40	40	0.35			
	—	20-80	40	0.5			
AUTO-COMBUSTIONS (LONDON) LTD. "Swirlamiser"	D.K.O.	68-240	70	0.75-2.5	230-240 V. 50 cycles 1/6 H.O. Motor 5 amp S.F. point	Equipped with photo-electric flame-safety device	
BRITISH DOBY STOCKERS LTD. "Light Oil Burner"	L4/1	75-175	40	0.6-1.4	230/250 Volts 50 cycles	Combustion head gives controlled flame and is adjustable while burning High combustion efficiency	
	L4/2	175-300		1.4-2.5			
	L5	300-600		2.5-5.0			
	L6	600-1,200		5.0-10.0			
BRITISH OIL BURNERS LTD. "Emulsor"	—	20-75	40	0.5	220/250 V. 50 Cycles. 1/15 amp S.F.P.	Fuel container designed to stand beside the domestic boiler, contains 8 galls	
BROCKHOUSE HEATER CO. LTD. "Light Oil Burners"	L.O. 175	75-175	40/45	0.6-1.5	Motor: $\frac{1}{2}$ H.P. at 1425 r.p.m. 230/250 Volts single phase. 50 cycles. Points required:— 15 amp switch fuse point	Has an adjustable combustion head	
	L.O. 300	175-300	40/45	1.5-2.3			
	L.O. 600	300-600	40/45	2.3-5.0			
	L.O. 720	600-720	40/45	5.0-6.0			
"Preheating Oil Burners"	F.A.P. 65	400-1,300	220	3.3-10.0	Points required:— 1/15 amp T.P. & N. 1/15 amp switch fuse for pre-heater	With furnace oil and heavy oil it is essential to fit an outflow heater at the storage tank. In the case of heavy oil the burner feed line should also be heated with electric pipe heating cable or steam tracer lines	
	F.A.P. 75	1,300-1,800	220	10.0-15.0			
	F.A.P. 90	1,800-3,500	220/960	15.0-29.0			
COMBUSTIONS LTD. "Automestic"	E.1.1	75-400	45	0.75-3.75	220-250 V. single phase	For central heating, steam raising, industrial and horticultural oil burning applications	
	E5-600	600-1,500	45	5.5-14.0			
	E.1.2	400-600	45	3.75-5.5	1/15 amp S.F.P.		
	E5-762	1,500-2,000	45	14.0-17.50			
	E6-762	2,000-2,750	45	17.5-24.0			
	E66-762	2,750-3,250	45	24.0-28.25			

[Continued on page 47]

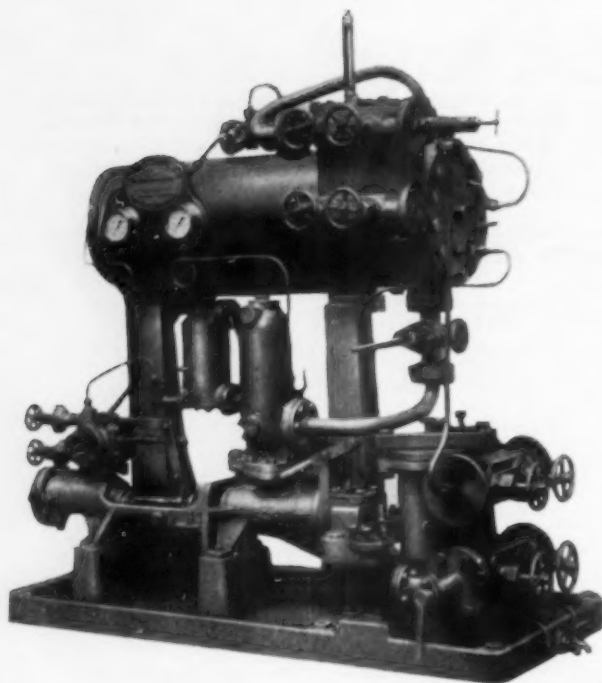
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Left: A forced-draught, thermostatically controlled vaporizing domestic burner, the Homefire, by Nu-way Heating Ltd., range 15,000 to 65,500 Btu/hr.

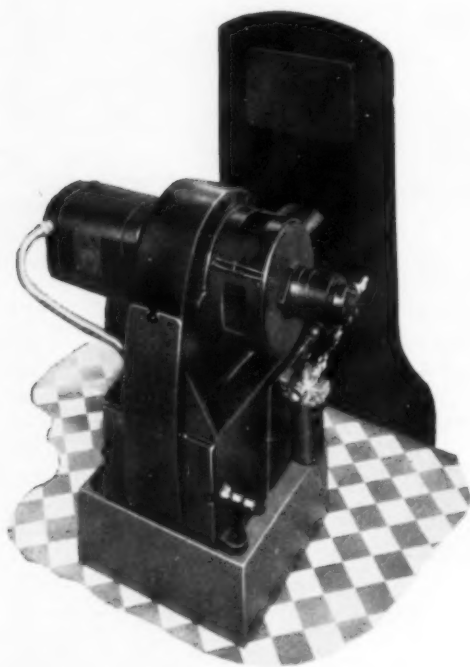


Right: The Prior (S.H.I.), a fully automatic pressure jet oil burner by Prior Stokers Ltd., range 100,000 to 300,000 Btu/hr.

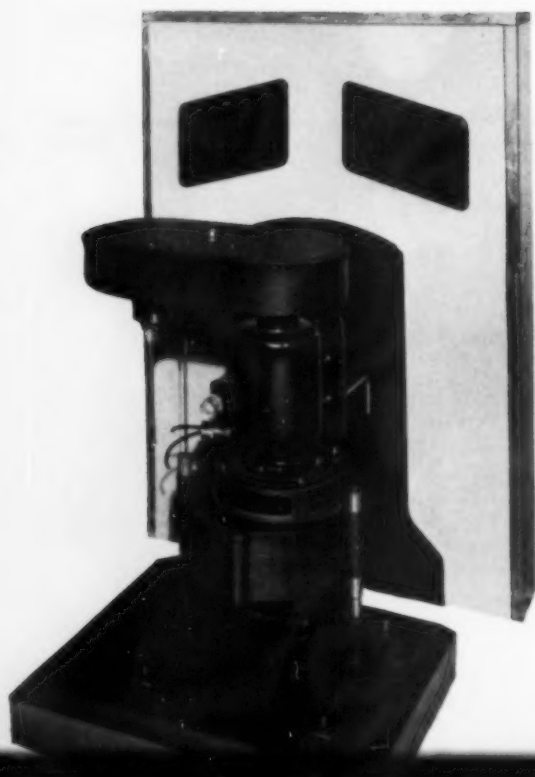


Left: Single unit with steam-driven pump for larger industrial requirements and marine work. By J. Samuel White & Co., Ltd, of almost unlimited capacity

Below: A fully automatic pressure-jet burner by British Doby Stokers Ltd., range 300,000 to 500,000 Btu/hr.

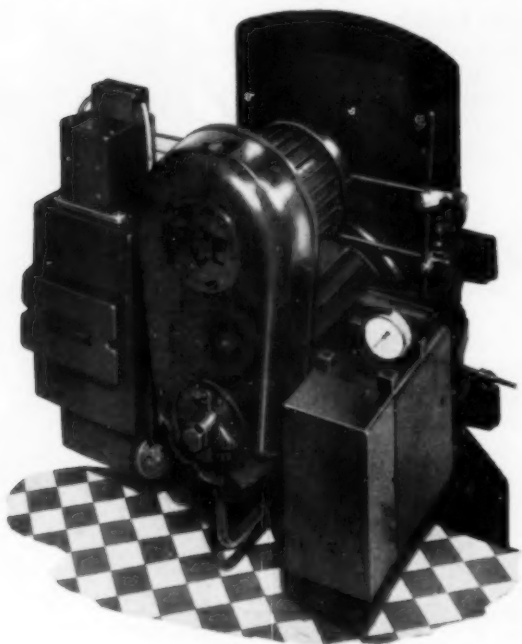


## ***Oil Burners***



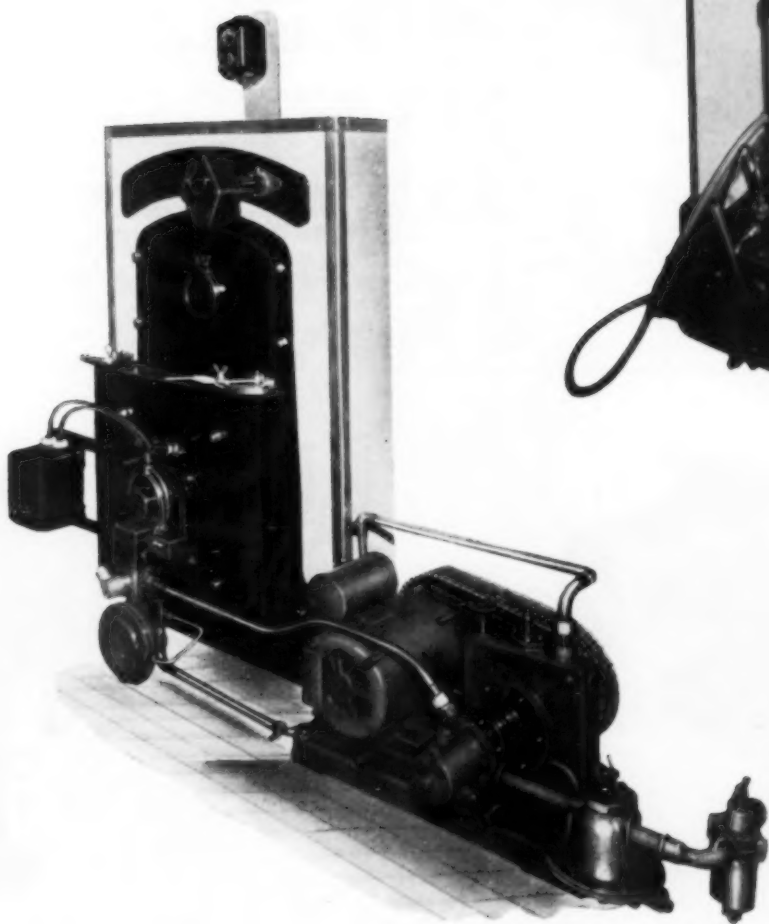
The Fisher pressure-jet oil burner, fully automatic, by Fisher Oil Burners, range 120,000 to 480,000 Btu/hr. The control cabinet is at the side





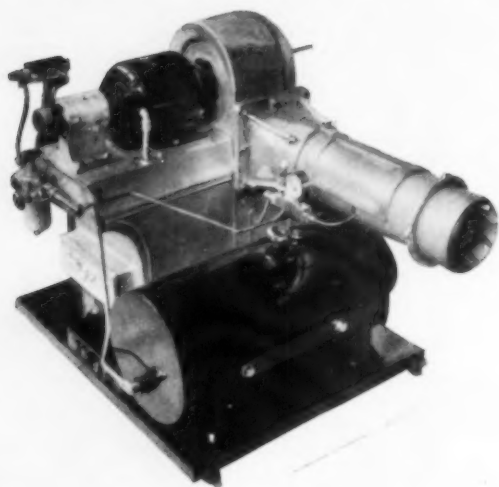
Left: The BCE Rotary (Model B2) by British Combustion Equipment Ltd., is a fully automatic rotary atomising burner with a range of 500,000 to 1,400,000 Btu/hr.

Below: The Hydra Standard Compact Model, a fully automatic rotary atomising burner by Hydran Products Ltd., with a range of 265,000 to 875,000 Btu/hr.

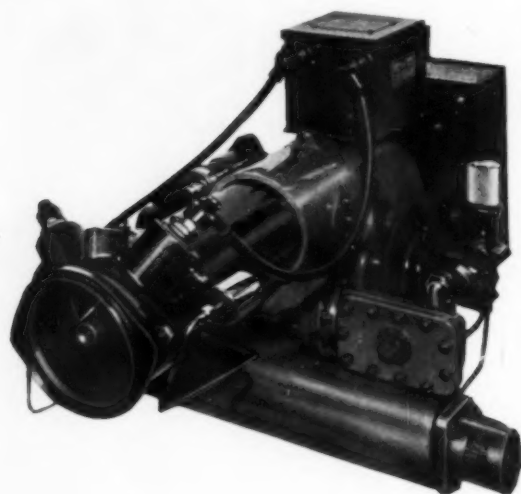


A fully automatic air atomising oil burner by Urquharts (1926) Ltd., with a range of 150,000 to 3,000,000 Btu/hr.

## Medium Range Burners



1



4



2

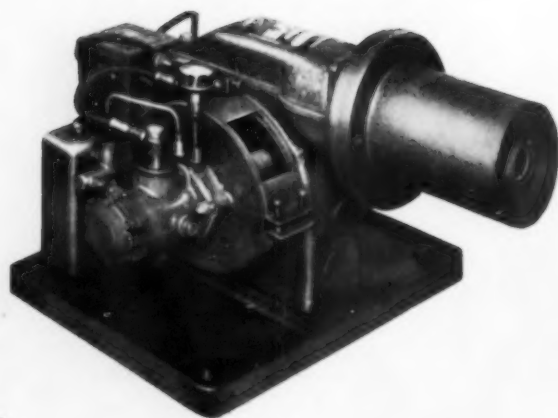
1. Type C, a fully automatic burner for large installations, by Hope's Heating and Engineering Ltd., with a range of 1,600,000 to 2,500,000 Btu/hr.

2. The Autocrat (Model A1), a fully automatic pressure jet burner by Heating Installations, range 75,000 to 275,000 Btu/hr.

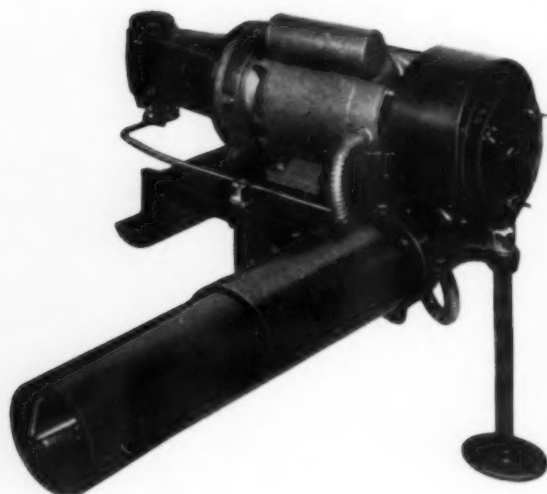
3. A fully automatic pressure jet burner, Type LO.300, by Brockhouse Heater Co. Ltd., range 175,000 to 300,000 Btu/hr.

4. The Automestic (Type 500-95), a pressure jet burner by Combustions Ltd., with a range of 250,000 to 650,000 Btu/hr., is fully automatic

5. Premier (Model P.1), a fully automatic pressure jet burner rated at 70,000 to 200,000 Btu/hr., by Premier Heating Systems



3

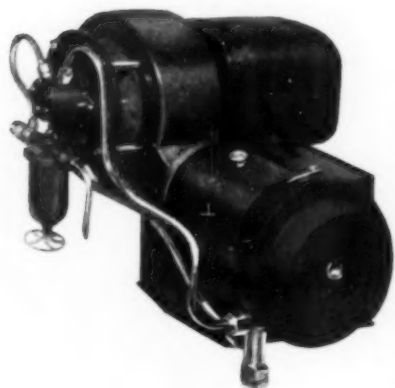


5

## Burner Information continued

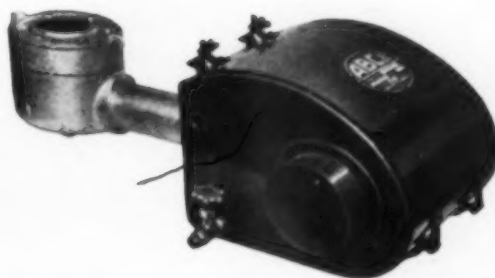
Name and Trade Name	Model	Output '000 B.Th.U.	Fuel Type	Consumption gals./hr	Details of Electrical Loading and Supply	Remarks
COMBUSTIONS LTD. "Automestic"	GS-500	250-650	250	2.25-6.0	Three phase supply preferred	Burners can also be provided for fuel oil 950 from 2,000,000 to 8,000,000 Btu/hr. and for fuel oil 250 from 3,250,000 to 8,000,000 Btu/hr.
(Continued)	FS-600	650-1,500	250	6.0-13.0	1/15 amp S.F.P.	
	F5-762	1,500-2,000	250	13.0-17.0		
	F6-762	2,000-2,750	250	17.0-23.25		
	F66-762	2,750-3,250	250	23.25-27.5		
FRANGLO PRODUCTS LTD. "Samoa"	A	30-100	1	2.2-6.3	200-250 V. 50 cycles 5 amp S.F. point	These burners have been used on the Continent for 20 years
	B	70-200		4.4-12.3		
HEATING INSTALLATIONS "Autocrat"	A1	75-275	35	0.75-2.75	220-250 V. 50 Cycles 1/15 amp. S.F.P.	Thermostatically controlled. Burner well insulated
	A2	300-500	35	3-4		
	A3	525-1,250	200	4.25-10	Preheater required 2/15 amp. S.F.P.	
	A4	1,275-2,250	200	10-18		
HOPES HEATING & ENGINEERING LTD.	A3	65-165	35-40	0.5-1.4	220-250 Volts. 50 cycles	In model A4 for outputs over 300,000 heavy fuel 200 should be used with 2 k.W. preheater. Seven-inch burner has dual nozzles and electrical equipment
	A4	170-400	35-40	1.4-3.25	2 k.W. 1/15 amp. S.F.P.	
	B5	400-900	200	3.25-7.5	2 k.W.	
	B6	900-1,600	200	7.5-13.25	3 k.W. 1/30 amp. S.F.P.	
	C7	1,600-2,500	200	13.25-21.0	4-5 k.W.	
INDUSTRIAL & DOMESTIC HEATERS LTD. "Selectos Streamline"	Minor	60-200	45-50	1.5	200-250 V. 50 cycles 1/15 amp. S.F.P.	These burners can be supplied to be run off 3-phase electrical supply
	4	130-415	45-50	3.5		
	5	310-910	45-50	8.0		
	6	650-1,300	45-50	10.5		
	7	1,300-2,250	45-50	18.5		
	5H	390-910	200	8.0	1/30 amp. S.F.P.	
	6H	650-1,300	200	10.5		
	7H	1,300-2,250	200	18.5		
KEY LEATHER CO. LTD.	K-L. 10,000	24 and 40	Gas oil or Paraffin or mixture	0.175 3.125	12 or 24 V. D.C. 140 watts	Single unit supplies two outputs with two-way control switch. Designed for vehicles, suitable for workshops, small houses, etc. Will blow fresh air in summer
LAILAW DREW & CO. LTD. "Pressure Jet"	P60	750-1,200	200	8	3 k.W. 15 amp. S.F.P.	Complete range includes hand control models and automatic on-off types. Up to 9,600,000 Btu with double nozzles
	P75	1,200-1,800	200	10	4 k.W.	
	P90	1,800-3,100	950	25	6 k.W. 30 amp. S.F.P.	
	P1000	3,100-4,800	950	36	9 k.W.	
MAY OIL BURNER (ENG.) LTD. "Quiet May"	A	90-180	30-45	1.5	220-250 V. 50 cycles 1/15 amp. S.F.P.	These burners have been developed for extra-quiet running
	M	130-400	30-45	3.3		
	L	130-850	200	7.0	1 1/4 k.W. 30 amp. S.F.P.	
	C	600-2,200	200	17.5	3 k.W.	
	R	1,400-4,000	200	33.0	6 k.W.	

[Continued on page 480]



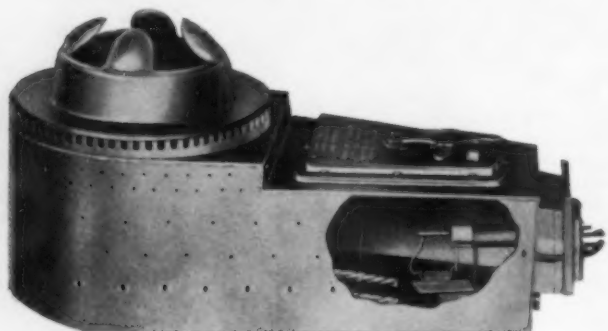
Left: The Clyde Junior, fully automatic pressure jet burner: rating 65,000 to 150,000 Btu/hr., by Clyde Fired Systems Ltd. Right: The ABC-Thermo, a forced draught vaporizing burner, rating 25,000 to 50,000 Btu/hr., by Associated British Combustion Ltd.

## Domestic Burners



## Burner Information continued

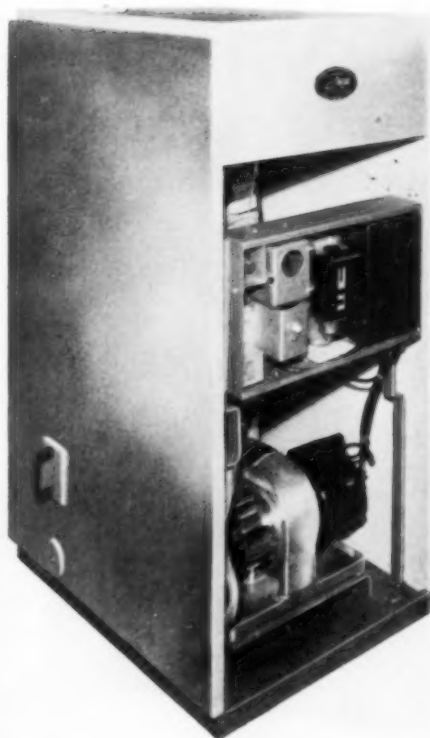
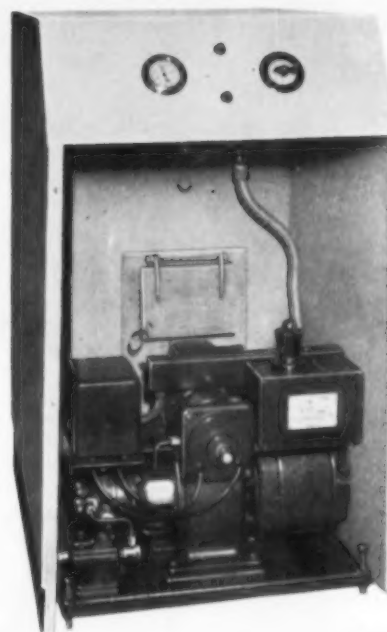
Name and Trade Name	Model	Output '000 B.Th.U.	Fuel Type	Consumption galls/hr	Details of Electrical Loading and Supply		Remarks
NU-WAY HEATING PLANTS LTD.	50 50	50	30/45	0.5	—		150 gallon fuel tank recommended for the Model 50. It can be supplied with 6 gallon tank for hand filling
" Home-fire "	—	65.5	30/45	0.56	5 amp S.F.P.		
" Rotavac "	1W	75-1,500	Any type of fuel	15	3 phase supply		Gravity oil feed. Fully automatic series available
	2W	700-2,500		25			
	3W	900-3,600		36			
	4W	1,500-6,000		60			
" Automatic "	XL 2	213	60	1.6	Single Phase 15 amp. S.F.P.		Normally provided with photo-electric flame failure devices. Larger models available for Heavy Oil burning
	XL 6	600	60	5	30 amp S.F.P.		
	XL 12	1,200	60	10			
	XL 20	2,000	60	16.6			
G. C. PILLINGER & CO. LTD. " Electromatic "	Minor	50-120	45	1	230 V. Single Phase. Due 15 amp. S.F.P.		All models fitted with " Lumastat " photo-electric cell control. Heavy fuel models will also burn the lighter fuels
	T.J.	120-250	45	2.25	3 kW 3 kW 4 kW 5 kW One 30 amp. S.F.P.		
	T.U.	250-700	200/250	6			
	T.L.	700-1,250	200/250	12			
	T.M.	700-3,000	200/250	20			
T.M.D.	2,500-4,500	200/250	25				
PREMIER HEATING SYSTEMS " Premier Automatic Oil Burners "	P1	60-200	39	0.4-1.4	15 amp. S.F.P.		Both Burners conform to B.S.799/1953. First produced 28 years ago with the name " Parwinac "
	P2	200-450	39	1.4-3.2	1½ kW 2 kW 3 kW 4½ kW 2/15 amp. S.F.P. or 30 amp. S.F.P.		
	P3	450-950	39	3.2-6.8			
	P4	950-3,000	39	6.8-21.4			
	P2	300-450	200	2.14-3.2			
	P3	450-950	200	3.2-6.8			
	P4	950-2,000	200	6.8-14.0			
	P4a	2,000-3,000	200	14.0-21.4			
PRIOR STOKERS LTD. " Prior Burner "	SH1	100-300	30/70	0.6-2.0	220/250 V. 50 cycles		Easy flame regulation
	SH2	300-500	30/70	2.0-4.3			
	SH3	500-800	30/70	4.3-6.6			
RUTHERFORD OIL BURNERS LTD. " Self Generative " Oil Burners	S	167.2	All types of oil fuel	1			The power required to atomize the fuel is generated in the burner itself by means of a small flash boiler. Gravity feed fuel tanks
	W	334.4		2			
	Q	836		5			
	P1	1672		10			
D. E. STUTTARD " Little "	00.C1	35		1.67	230/240 A.C. 50 cycles 5 amp. S.F.		Claimed to be the only fully automatic vaporizing type in the world
	0.C1	60		3.0			
	9.C1	87.5	34/45	4.17			A range with similar outputs is made for manual operation with gravity feed
	1.C1	113.75		5.42			
	2.C1	175		8.34			
	3.C1	245		11.68			
	4.C1	350		16.68			
VAPOURHEAT LTD. " Cob "	2	280	35/45	2	220/250 V. 15 amp. S.F.P.		Either hand operated or thermostatically controlled
	3	105	35/45	0.75			
J. SAMUEL WHITE & CO. LTD.	All burners purpose made to suit individual requirements. No automatic running						For marine and Industrial boilers. Designed for flexible operation



The "Little" automatic self-lighting oil burner, by D. E. Stuttard, with a range, in seven sizes, of 35,000 to 350,000 Btu/hr. All seven models are also available with manual control. It is claimed to be the only fully automatic vaporizing type of burner in the world



## Burners and Boilers

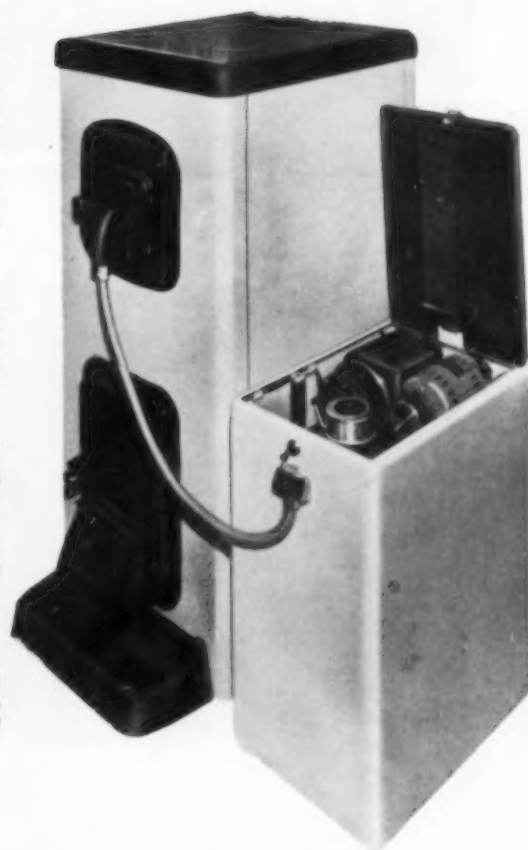


Top left: Twin Crane "Carlton" boilers, rating 82,000 Btu/hr., fitted with a special type of medium pressure air burner, produced by Shell-Mex & B.P. Ltd. This layout was used at an exhibition at the Building Centre last December to demonstrate efficient and inefficient combustion

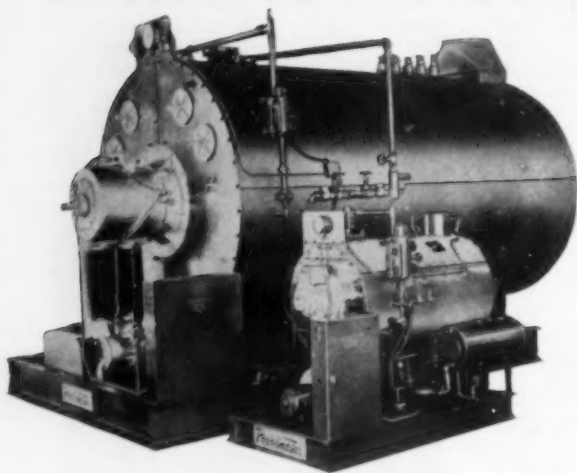
Top right: The Electromatic boiler-burner unit, rating, 50,000 to 120,000 Btu/hr., by G. C. Pillinger & Co. Ltd.

Bottom left: The Autoheat, a fully automatic boiler-burner unit, rating 120,000 Btu/hr., by The Clarkson Thimble-tube Boiler Co. Ltd., fitted with a Selectos Minor burner by Industrial and Domestic Heaters Ltd.

Bottom right: The Emulsor. A fully automatic domestic burner rated at 20,000 to 75,000 Btu/hr., by British Oil Burners Ltd.

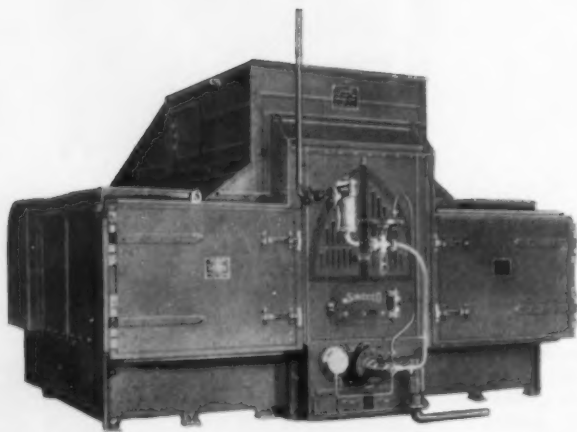


## Larger Installations



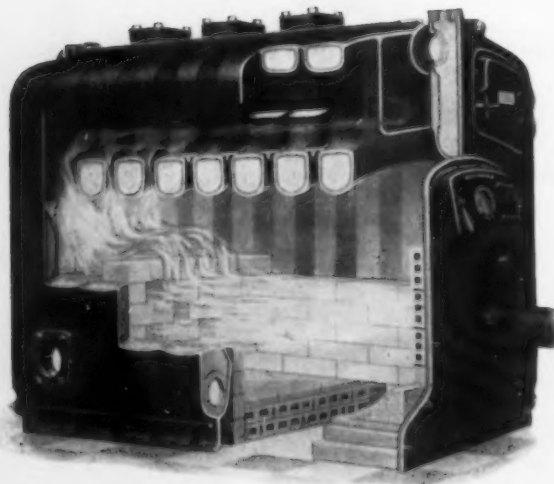
1

1. The Powermaster "packaged" boiler by G. W. B. Furnaces Ltd. The Model 50 gives a nominal maximum output of 1,725 lb of steam/hr. The boiler and burner equipment, both mounted on a channel frame base, are supplied complete



2

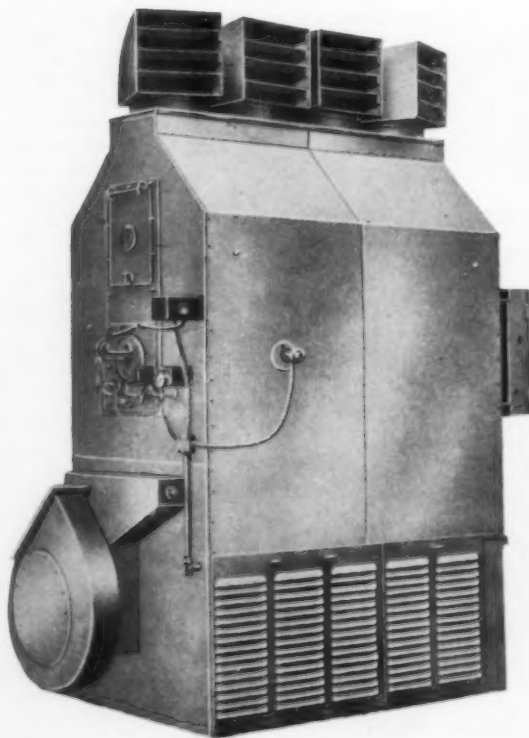
2. The "Sirocco-Wallsend" low air pressure liquid fuel burning air heater. Fuel is gravity fed from storage tanks. This equipment has been developed principally for the tea-drying industry but it is equally suitable for space heating of large areas. By Davidson & Co. Ltd.



3

3. A cut view of an Ideal Britannia Boiler showing the waterways, double flue travel of the heated gases, and a method of fire-bricking. The series ranges from 40,000 to 1,462,000 Btu/hr., others reach a maximum of 2,440,000 Btu/hr. By Ideal Boilers and Radiators Ltd.

4. The Dravo oil-fired industrial space heater, from Weatherfoil Heating Systems Ltd. There are six models, ranging from 400,000 to 1,500,000 Btu/hr. output. The outlet nozzles mounted on the top of the heater can be turned to discharge in any direction

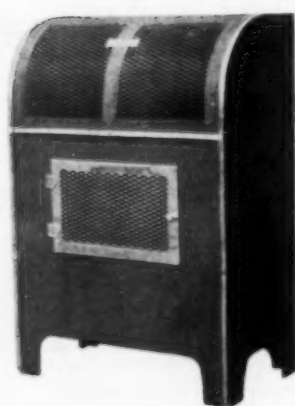


4

**Firms Mentioned in this Article**

- ASHWELL & NESBIT, LTD.,  
Leicester. Leicester 67151.
- ASSOCIATED BRITISH COMBUSTIONS, LTD.,  
Portchester, Fareham, Hampshire. Cosham 76468/9.
- AUTO-COMBUSTIONS (LONDON), LTD.,  
360/362, Wandsworth Road, London, S.W.8. Macauley 3716.
- BRITISH COMBUSTION EQUIPMENT, LTD.,  
Poole, Dorset. Poole 734.
- BRITISH DOBY STOKERS, LTD.,  
4, Stratford Place, London, W.1. Mayfair 5054.
- BRITISH OIL BURNERS, LTD.,  
9, Warren Street, Fitzroy Square, London, W.1. Euston 4026.
- BROCKHOUSE HEATER CO., LTD.,  
Victoria Works, West Bromwich, Staffs. Wednesbury 0234.
- CLARKSON THIMBLE-TUBE BOILER CO., LTD.,  
15, Fetter Lane, London, E.C.4. Central 6181.
- COMBUSTIONS, LTD.,  
Cox Lane, Tolworth, Surbiton, Surrey. Elmbridge 7165.
- CLYDE FUEL SYSTEMS, LTD.,  
35, St. Georges Square, S.W.1. Victoria 4857.
- DAVIDSON & CO., LTD.,  
Sirocco Engineering Works, Belfast, Northern Ireland. Belfast 57251.
- ESSO PETROLEUM CO., LTD.,  
36, Queen Anne's Gate, S.W.1. Whitehall 5151.
- FISHER OIL BURNERS,  
33, Coulsdon Rise, Coulsdon, Surrey.
- FRANGLO PRODUCTS, LTD.,  
3, Pipe Lane, Bristol, 1. 25693.
- G.W.B. FURNACES, LTD.,  
P.O. Box No. 4, Dibdale Works, Dudley, Worcs. Dudley 4284.
- HEATING INSTALLATIONS,  
41 and 43, Westminster Bridge Road, London, S.E.1. Waterloo 4242.
- HOPE'S HEATING & ENGINEERING, LTD.,  
17, Berners Street, W.1. Museum 8412.
- HYDRAN PRODUCTS, LTD.,  
Hydra Works, Gresham Road, Staines, Middlesex. Staines 502.
- INDUSTRIAL & DOMESTIC HEATERS, LTD.,  
23, Fitzroy Square, London, W.1. Euston 4809.
- KEY LEATHER CO., LTD.,  
5, Urswick Road, London, E.9. Amherst 5202/4.
- LAIDLAW, DREW & CO., LTD.,  
9-13, Tower Street, Leith, Edinburgh, 6. Leith 36876/7.
- MAY OIL BURNER (ENG.), LTD.,  
Lion House, 72-75, Red Lion Street, High Holborn, London, E.C.1. Chancery 8244-5.
- NU-WAY HEATING PLANTS, LTD.,  
110-111, Strand, London, W.C.2. Temple Bar 5671.
- G. C. PILLINGER & CO., LTD.,  
Sutton Common Road, Sutton, Surrey. Fairlands 8844/5/6.
- PREMIER HEATING SYSTEMS, OIL FIRING ENGINEERS,  
49, Eastbourne Street, Walsall. Walsall 2430.
- PRIOR STOKERS, LTD.,  
1-3, Brandon Road, York Way, London, N.7. North 2245/8.
- RUTHERFORD OIL BURNERS, LTD.,  
Netherton Road, Wishaw, Lanarkshire. Wishaw 142.
- SHELL MEX & B.P., LTD.,  
Shell Mex House, Strand, London, W.C.2. Temple Bar 1234.
- SHORROCK SUPERCHARGERS, LTD.,  
Empress Works, Walsall Road, Willenhall. Willenhall 737.
- D. E. STUTTARD,  
Westfield Mill, Mytholmroyd, Halifax, Yorks. Calder Valley 2167.
- SUNROD, LTD.,  
Cray Avenue, St. Mary Cray, Kent. Orpington 25766.
- TROPICAIRE, LTD.,  
Ashford, Middlesex. Ashford 4091.
- URQUHARTS (1926), LTD.,  
33, Chase Road, Park Royal, London, N.W.10. Elgar 6322.
- VAPOURHEAT, LTD.,  
212-213, Grand Buildings, Trafalgar Square, London, W.C.2. Whitehall 4211.
- WEATHERFOIL HEATING SYSTEMS, LTD.,  
185, Bath Road, Slough, Bucks. Slough 25561/2/3.
- J. SAMUEL WHITE & CO., LTD.,  
Cowes, I.O.W. Cowes 103.

Acknowledgment is made to Esso Petroleum Co. Ltd., for the fuel oil Zone Map, and to Shell Mex and B.P., Ltd. for a number of the photographs.

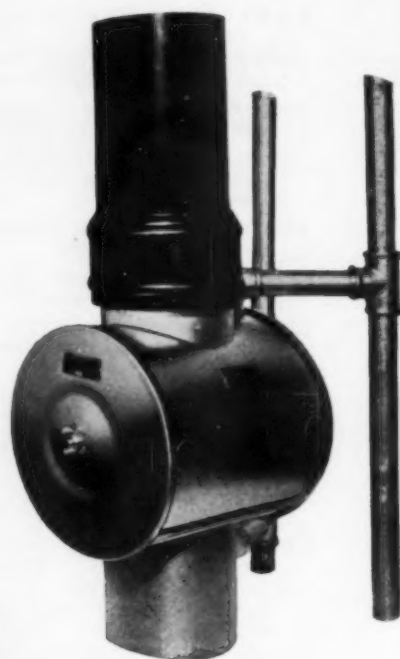


Far Left: The Model 50 heater, by Nu-Way Heating Plants Ltd., has an output of 50,000 Btu/hr. It can be supplied with a hand-filled 6-gallon tank, although main storage of 150 gallons is recommended. A flue is required.

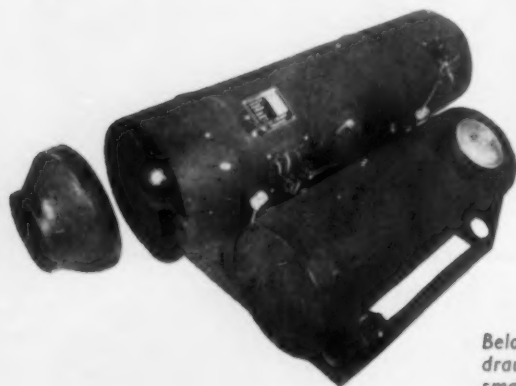
Left: The Langham Draught Stabiliser, a device inserted in the boiler flue to eliminate variations in draught due to weather conditions. Made in seven sizes by Industrial & Domestic Heaters, Ltd.

**Miscellaneous**

Two fuel economizers, left: by the Clarkson Thimble-tube Boiler Co. Ltd., and right: by Sunrod Ltd. Both are made in several sizes

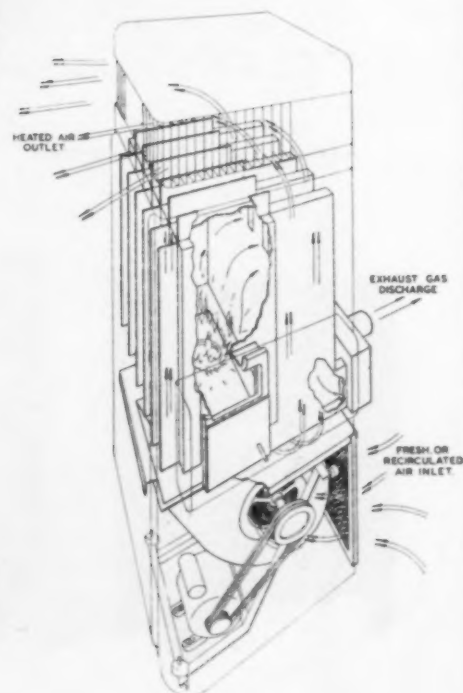
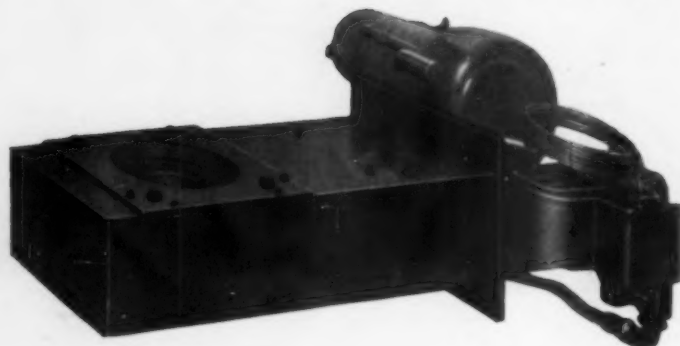


Below: The K-L 10,000 self-contained combustion heater by Key Leather Ltd., rating 40,000 and 24,000 Btu/hr.



Left and below: a medium-sized industrial space heater, suitable for areas between 3,000 and 20,000 sq. ft., by Tropicair Ltd.

Below: The Cob, series 3, forced draught vaporizing burner for small boilers, by Vapourheat Ltd. Rating 30,000 to 90,000 Btu/hr.





## LEGAL COMMENTARY

**The Law's Delays**

By F. H. B. LAYFIELD

**C**OMPLAINTS are frequently made about the length of time which elapses between the moment when an action is started in the High Court and the occasion on which it is actually heard. In recent years serious efforts have been made to tackle this problem of delay. One of the principal causes of delay is the very large number of cases waiting to be heard and the consequently long lists. But it has been suggested that many cases at present heard in the High Court could very well be dealt with in the County Courts. If some cases now heard in the High Court were to be heard in the County Courts this would not only relieve pressure upon the time of the High Court but would, at the same time, often provide the litigants with a cheaper and speedier remedy. To achieve this state of affairs is the main purpose of the *County Courts Bill* now before the House of Lords.

Hitherto, if a claim was made in the County Court for more than £100, whether in contract or in tort, the party defending the claim could require the action to be transferred to the High Court. If the claim was for more than £200 it had to be brought in the High Court in the first place. The Bill now proposes that the County Court shall be entitled to hear actions, both in contract and tort, involving sums up to £400; and provision is made for this limit to be raised later, by order in Council, to £500. The right to require proceedings to be transferred to the High Court is to be abolished. At the same time the number of County Court Judges is to be increased to meet the increase in their work which is expected when the measure is passed. Various other changes are proposed. Parties are to be entitled to confer jurisdiction on the County Court by agreement without the necessity of first starting proceedings in the High Court. Penalties are provided for those who start an action in the High Court which they could have brought in the County Court. Most important of all, a right of appeal on *questions of fact* in certain County Court actions is now to be conferred.

No doubt the Bill will undergo changes during its passage through Parliament, but its main features are likely to remain the same. If this be so the measure will be one which should be welcomed by litigants particularly where such matters as small building claims are involved. More-

over it should have a beneficial effect upon the speed with which the larger actions are brought on for hearing.

**The Architect's Certificate**

That perennial fount of litigation, the R.I.B.A. Standard Form of Contract, has once again produced an interesting case. On this occasion the architect's final certificate was the cause of the dispute. In *Windsor Rural District Council v. Otterway & Fry, Ltd.*, R.I.B.A. Contract No. 6 had been employed. Clause 24 provided that

... the architect shall, ... issue a final certificate of the value of the works executed by the contractor and such final certificate ... shall be conclusive as to the sufficiency of the said works and materials.

The contract was duly carried out and no complaint was made as to the quality of the work or materials. The architect issued a final certificate and payment was made of the sums certified. It was, however, subsequently discovered that due to an error in calculations, the sum certified had been, it was said, larger than should have been paid. The sums overpaid were claimed from the contractors and in consequence a dispute arose. The contractor relied upon the final and conclusive nature of the architect's certificate. The building owner relied upon Clause 27 which gave the arbitrator power

to open up, review and revise any certificate, opinion, decision, requisition or notice and to determine all matters in dispute ... in the same manner as if no certificate [etc.] ... had been given.

The question at issue was whether Clause 27 empowered the arbitrator to re-open the final certificate notwithstanding the "conclusive" nature of that certificate. The Judge observed that

The contract is not one that has been drafted as a whole and fully formed at one given moment; it is a contract which is built up from time to time by clauses being added ... I think it is clear that at some time whoever is responsible for drafting this document decided ... that it would be desirable to give the arbitrator these very wide powers. He does that by putting some words on to the end of Clause 27 and it does not occur to him to go back and redraft Clause 24 in the light of what he has done.

The Judge held that Clause 24 had to be read subject to the express provision in Clause 27. Accordingly the architect's certificate was final and conclusive subject to the arbitrator's power to re-open it.

Those architects who act as arbitrators, or who may do so, should note the comments which the Judge made in this case upon the manner in which an arbitrator should state a case for the Court.

**Delay in Completion**

An interesting matter was recently canvassed before the Court of Appeal. A contractor had undertaken to build certain houses within a specified period of eight months for a fixed sum. The contractor in *Davis Contractors, Ltd. v. Fareham U.D.C.* had appended to his tender a letter stating that it was subject to adequate supplies of labour being available as and when required. In fact, owing to an unexpected delay in demobilization after the war and not due to any fault of either party, adequate supplies of skilled labour were not available. The work in consequence took 22 months to complete instead of eight months. Now it is a well-known principle of law that if, in the course of executing a contract, some catastrophic event occurs, which completely destroys some basic assumption upon which the parties contracted, then that may destroy the contract. The contractor said that this had occurred here. He also pointed to another principle of law. During the carrying out of the contract a situation may arise which is fundamentally different from that contemplated by the parties. If that change is caused by the conduct of one of those parties then he will not be allowed to take advantage of the change in affairs to the detriment of the other party if it would be unjust to allow him to do so. The contractor, therefore, urged that he was entitled to be paid on a *quantum meruit* basis a sum in excess of the contract price.

The Court held that the unexpected turn of events was not sufficiently "catastrophic" to destroy the basis of the contract. As regards the second contention Lord Justice Denning made an important comment.

This case then becomes simply one where, without fault of either party, there has been an unexpected turn of events which renders the contract more onerous than the parties had contemplated. This is no

ground for relieving the party of the obligation he has undertaken . . . When an owner employs a builder to do work for a fixed sum, his whole object is to secure himself against the unexpected difficulties, which so often arise. This court could seriously damage the sanctity of contracts if we allowed a builder to charge more simply because, without anyone's fault, the work took him much longer than he thought.

It was held, accordingly, that there were not grounds for relieving the contractor of his liability under the contract nor for allowing him to recover on a *quantum meruit*. This decision of the court is one which all contractors should have in mind when they enter a contract in which difficulties of the kind here mentioned are likely to arise. It should be pointed out that leave has been granted in this case to appeal to the House of Lords.

#### Children on Building Sites

The law that governs the duties which those who control a building site owe to people who come on to that site is complex. Particularly is this true where children are concerned. (This matter was considered in an article by Giles Best in the *A. & B. N.* of December 30, 1954.) One aspect of this problem has been discussed recently. One October evening a boy, aged five, together with his sister aged seven, walked across a piece of grassland forming part of a building site. A long deep trench had been dug across the site for a sewer. The boy fell into this and broke his leg. The parents and children lived close by the grassland. Children were in the habit of using the land and the corporation took no action to prevent them. In the ensuing case the Judge held that children were impliedly licenced to play on the land and that a trench, though not an allurement or a danger concealed from an adult or a big child was a danger imperceptible to a child of the boy's age. The question was, therefore, what duty the corporation owed to children of that age. The Judge set out the principle involved saying that:

A licensee who tacitly permits the public to use his land without discriminating between its members must assume that the public may include little children. But as a general rule he will have discharged his duty towards them if the dangers which they encounter are only those which are obvious to a guardian or of which he has given a warning comprehensible by a guardian. To every general rule there are, of course, exceptions. A licensor cannot divest himself of the obligations

of finding out something about the sort of people who are availing themselves of his permission and the sort of use they are making of it. He may have to take into account the social habits of the neighbourhood. No doubt there are places where little children go to play unaccompanied. If the licensor knows or ought to anticipate that, he may have to take steps accordingly. But the responsibility for the safety of little children must rest primarily upon the parents, it is their duty to see that such children are not allowed to wander about by themselves, or at least to satisfy themselves that the places to which they do allow their children to go to unaccompanied are safe for them to go to. It would not be socially desirable if parents were, as a matter of course, able to shift the burden of looking after their children from their own shoulders to those of persons who happen to have accessible bits of land. Different considerations may well apply to public parks or recognised playing grounds where parents allow their children to go unaccompanied in the reasonable belief that they are safe.

Apart from this important statement of principle the judgment in this case, *Phipps v. Rochester Corporation*, is remarkable for a thorough and lucid review of all the cases bearing on this difficult question.

#### Housing

Following up their two Circulars of 1954 on the subject of slum clearance (30/54 and 55/54), the Ministry of Housing has now produced a more comprehensive guide to the procedure involved entitled "*Slum Clearance Procedure*," Circular 75/54. It deals with a miscellaneous group of matters, and in particular deals with the procedure for serving notices in the making of a clearance order or a compulsory purchase order. In this connection, new rules have been made governing the service of notices regarding abatement of overcrowding, postponement of demolition, compulsory purchase of land in a clearance area and the purchase of unfit houses. These are the *Housing (Form of Orders & Notices) (Amendment) Regulations, 1954*. New arrangements have also been made for orders where houses are considered to be unfit for human habitation and not capable of being rendered fit at reasonable expense. These are set out in the *Housing (Declaration of Unfitness) Regulations, 1954*.

Although the war has been over for ten years, there are still some 62,000 houses under requisition, and these houses contain some 90,000 families.

Moreover, some 50,000 of these houses are to be found in the London area. The Government has been under pressure for some considerable time to take measures to deal with the position. No doubt the necessary complexity of the problem accounts for the lateness of the attempts to solve it and also for many of the shortcomings in the Bill now before Parliament. This is the *Requisitioned Houses and Housing (Amendment) Bill, 1955*. The Minister of Housing has said that the Bill has three main objects:

- (a) to bring to an end the use of requisitioning powers for housing purposes within a period of five years;
- (b) to avoid thereby causing hardship to the families now living in these houses; and
- (c) to secure the release before five years of requisitioned houses whose owners have urgent need of them.

The actual provisions of the Bill are complex and lengthy and still under discussion. It is not proposed to examine its provisions here until the Bill becomes law.

#### Town and Country Planning

Many of the Regulations required to bring the *Town and Country Planning Act, 1954*, into full effect have now been made. Those who wish to claim payments under Part I of the Act (namely for certain events and transactions between July 1, 1948 and January 1, 1955) should note that these have to be in to the Central Land Board by April 30, 1955. Applications for payments in respect of past planning decisions have to be submitted to the appropriate local planning authority by June 30, 1955. The Minister of Housing has said that these claims are being submitted in reasonable numbers so far. While extensions of time may be granted under the Regulations these cannot be relied upon and would-be applicants will do well to watch the time.

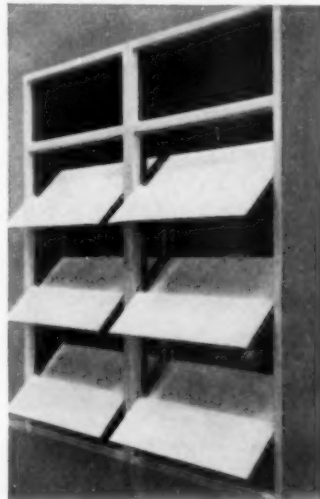
Now that the majority of development plans have been submitted to the Minister, attention is beginning to turn to the quinquennial review of these plans. A Circular on this subject has now been issued by the Minister of Housing entitled "*First Review of Approved Development Plans*" (9/55). It is a somewhat cautious document, but contains some points of general principle which, if they are followed, are of some significance. Naturally the main question for the revision must be what period the revised plan should cover. This problem is answered by the clear statement that

The Minister considers that the purpose of the first review will best be served by keeping within the

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period of the existing plans, reserving until the second review a substantial extension of the period.

The Circular deals with the new survey work which should be undertaken and happily urges that the fresh survey report should be "fairly brief." In complying with this advice many authorities will merely be repeating what they did before. It is also stressed that "the Report should be capable of being read without reference to the original report." Perhaps with an eye on the behaviour of a few local planning authorities on an earlier occasion "The Minister hopes that authorities will make their survey reports readily available to the public." This Circular will repay careful study, though doubtless much more will need to be said on this subject.

If, however, the Minister in his Circulars and letters often counsels reasonable and fair dealing, the same attitude cannot, unfortunately, invariably be said to inform his own actions. He was asked recently in the House of Commons if he would make available to the parties to inquiries the instructions given to inspectors regarding the conduct of such inquiries. His reply was "I do not think that it would be helpful to appellants to see the instructions." (Hansard, vol. 537, p. 137). It is difficult not to wonder what kind of instructions these may be.

### Grants to 38 Historic Buildings—5th List

During the past three months 38 grants for the preservation of historic buildings, their contents and adjoining land have been offered and accepted. The grants, totalling over £120,000, are offered by the Minister of Works, acting on recommendations by the Historic Buildings Councils for England, for Scotland and for Wales. The 38 buildings are as follows:—

**England:** Kirkleatham Hospital and Browsholme Hall, Yorkshire; Burghley House, Northamptonshire; Cold Overton Hall, Rutland; Courteenhall, Northamptonshire; Brick House, Great Hormead, and 18, Melbourn Street, Royston, Hertfordshire; Kimbolton Castle, Huntingdonshire; Ampthill Park, Bedfordshire; Belchamp Hall, Essex; Old Hall, Snettisham, Norfolk; Old Byfleet-Manor House, Surrey; Knole, and Hollingbourne Manor, Kent; Tythrop House, Buckinghamshire; Waddon House, and Chettle House, Dorset; Nether Lypiatt, and Flaxley Abbey, Gloucestershire; 68, The Close, and Bishop's Palace, Salisbury; Saltram House, and Shute Barton, Devon; Cottages at Bibury, Glos; 21 and 22, The Circus, Bath, Somerset; Harvard House, Stratford-on-Avon, Warwickshire; Stanwardine Hall, and Condoval Hall, Shropshire;

Market Hall, Ross-on-Wye, Herefordshire; Kenyon Peel Hall, and Gawthorpe Hall, Lancashire; Little Moreton Hall, Cheshire.

**Scotland:** Provost Ross's House, Aberdeen; Barcaldine Castle, Argyllshire; Arncliffe House, Midlothian; Pourie Castle, Angus; Houses in Cathedral Street and High Street, Dunkeld (Second grant).

**Wales:** Chirk Castle, Denbighshire (Second grant).

The grants are made, under Part I of the Historic Buildings and Ancient Monuments Act, 1953, towards the cost of the repair or maintenance of buildings which are considered to be of outstanding historic or architectural interest, or their contents or adjoining land. Conditions attached to the grants include the granting of reasonable opportunities for the public to see the historic buildings.

Three of the buildings were unoccupied when they were brought to the attention of the Historic Buildings Council for England. It is due to the efforts of the Historic Buildings Bureau that people or organizations interested in using them were found. Grants for repairs recommended by the Historic Buildings Council then enabled them to be brought into use again—Tythrop House as a private residence, Kenyon Peel Hall as flats for old people, and Ampthill Park House as a home for the sick.

In addition to the 38 grants for particular buildings, a grant was made to Bath Corporation for the purchase of stone and scaffolding in preparation for a general programme of repair to the City's terraces; this programme will be drawn up by a special Advisory Committee (the membership of which was announced on March 28th, 1955).

With the grants announced on March 25, July 5 and October 4, 1954, and January 6, 1955, the total number of buildings assisted under the Historic Buildings and Ancient Monuments Act is now 150, and the total value of grants is about £405,000.

Nearly 640 applications for aid have so far been received by the three Historic Buildings Councils, of which about 310 have so far been rejected.

### The S.P.A.B. Annual Course on the Repair of Ancient Buildings

The Society for the Protection of Ancient Buildings is again providing facilities for architects interested in and responsible for old buildings to obtain knowledge of its principles and methods of repair, and is arranging its annual course, consisting of lectures, discussions and visits, to cover the many important aspects of repair work.

The Society is anxious to secure that more architects should understand not only traditional constructional methods but also the principles underlying the sympathetic and conserva-

tive treatment of old buildings, whether ecclesiastical or secular. In view of the specialist nature of work of this character the Society believes that the opportunity to study at first hand some of the problems which arise will be helpful to architects interested in this subject. It is also hoped that Local Authorities and others will be able to give facilities to the architect members of their staff to take advantage of this scheme.

The Course will be held from May 16-21, 1955, and the Society invites those who are interested to apply for further details to the Secretary, The Society for the Protection of Ancient Buildings, 55, Great Ormond Street, W.C.1.

### Technical State Scholarships

Details of the Technical State Scholarships to be awarded this year have been announced in a Ministry of Education memorandum to Local Education Authorities, Technical Colleges and Further Education Establishments.

Most of the scholarships will be offered to students from Technical Colleges and other Establishments of Further Education who have obtained an Ordinary National Certificate or equivalent qualification, and will enable them to pursue full-time Honours degree courses or courses of equivalent standard at Universities, University Colleges or Establishments for Further Education.

Candidates must have been in full-time or part-time attendance at a Further Education Establishment for not less than two years immediately preceding August 1 of the year in which the award is made. The Minister may allow an exception to be made to this condition in special circumstances, such as National Service.

A limited number of awards may also be made to enable suitable candidates who by part-time work have obtained an initial qualification of University first degree or Higher National Certificate standard to attend approved post-graduate courses of study or research in applied science or technology. The awards will be available for a minimum of one year and a maximum of three years. Candidates for these awards must give full particulars of the study or research which they intend to undertake, and must be recommended not only by the Further Education Establishment at which they obtained their initial qualification but also by the Establishment at which they propose to take a post-graduate course.

Full particulars of the conditions of entry and method of application are given on Form 1 U.T. Copies of this form and of the form of application (Form 2 U.T.) are being sent to Principals of Establishments for Further Education. Further copies may be obtained from the Ministry of Education (F.E.I(d)), Curzon Street, London, W.1.

## Building Research—D.S.I.R. Annual Report

**A**NNUAL reports are usually of interest for pronouncements of policy and for accounts of past progress. The D.S.I.R. Annual Report does just this. Newsy bits about what B.R.S., the Fire Testing Station and others are doing now are prefaced by some pointed remarks about the building industry and its relations with research work.

### Policy

D.S.I.R. has a 5-year plan, which means mostly more money for more staff to the most needy research establishments, but B.R.S. is not among these. B.R.S. suffered cuts in 1952 which have partially been made good but the Advisory Council suggests . . . "that any further substantial increase in the resources for building research . . . must be sought outside the Department." The Council says . . . "We have no doubt that there is justification for extending research on building, but looking at the problem as one of many within the Department's scope, we cannot but recognize that there must be a limit to the proportion of the resources available for the Department's Establishments which can be devoted to this activity." And . . . "the building industry as a whole does not appear to make so large a contribution to research for its benefit as do most industries, and as it might do." In other words, D.S.I.R. helps those who help themselves, and the building industry does not help itself.

What industries do help themselves? There are 41 Research Associations set up by various industries and these are usually financed by the industry and D.S.I.R. on a 50-50 basis. Some of these, as D.S.I.R. acknowledges are related to the building industry in that some of the materials they produce are used in building, such as the Chalk Lime and Allied Industries Research Association, but materials for building form only a small part of their work and not usually the most profitable part.

Some years ago, the Building Industries National Council had a Research Committee, which was formulating proposals for a Research Association to undertake work such as development of housing assemblies, and it was getting bogged down on the question of finding the half share of the cost, when B.I.N.C. became defunct.

Why precisely does the building industry not take a more active part in research? There are several answers, but the main one is that research does not show much of a cash return to the materials producer and less to the individual builder. A builder cannot say

that he can save 10 per cent of his costs on each house because of anything he has read in a B.R.S. digest. There are economies, of course, in roof design, use of lightweight blocks, etc., but usually the saving is lost to view in all the changes in other costs. He is saved from serious trouble frequently, but none of us is so generous in gratitude for something in the past as we are in anticipation of a possible cash return in the future. The biggest savings may be in building methods, use of cranes, etc., and single-stack plumbing and such like, which benefit the large contractor, but the credit may go to the salesman of the crane makers in the one case, and in the other the benefits are passed on at once to the building owner, and leave the plumber with a bit of a headache and not much heavier pocket.

This may be the key to two aspects. Whereas the engineering industry, when a casting metal is perfected, can go on casting *ad lib.* and either showing greater profit or increased sales, the builder when a new method or system (single-stack plumbing) is produced still has the puzzle of applying it. He has, as it were, to retool for each job. Even new materials have to be "sold" to each client, to each architect, unfortunately, to the craftsman, the labourer has to be persuaded to carry them and the lorry driver how they must be loaded. Is it worth it? This is why, when building for the same client, e.g., a housing authority, results of research can be used more often, as also when building with the same team as in prefabricated erection.

The second point is that the economics of building differ so much from the economics of other industries. It is the opposite of a specialized industry; any builder will build anything. This is because his market is limited geographically (for the run of small and medium-sized firms). His application of techniques has to cover such a wide field that he cannot master any to a high degree nor can he experiment with any. At the same time cheapness is everything; to get the jobs he cuts his profit and his overheads, and has not enough left for making his organization more efficient, let alone pay a levy to a research association. It seems that the average profit margin and overhead margin is lower in the building industry than in any other. Heating engineers charge 80 per cent for overheads and profits on daywork. Their workshops and technical staff are naturally more expensive but not that more expensive than a builder's.

In the opinion of some, cheap building has been the millstone round the

neck of development in the building industry.

Another factor is the size of the building firms. Was it not shown somewhere that 90 per cent of building firms had less than 10 operatives on their books? The small builder has enough with daywork sheets, insurance cards, P.A.Y.E., holidays with pay, etc., and does not see why he should have to make another contribution to a research association which is not likely to be able always to tell him how to stop a chimney smoking. It would presumably not be impossible for the N.F.B.T.E., the L.M.B.A., the Federation of Master Builders and others to form a scheme for collecting a levy as part of annual subscriptions, but something like £50,000 a year would be needed. By how much would each firm's subscription be increased to get that, and how would they like it?

No, until the building industry is better organized; until it realizes by experience that organization, cost analysis and the rest pay dividends *and* until it makes more profit, it will not take kindly to paying directly for research.

### N.F.B.T.E. Scheme

Not that nothing is being done by the building industry. The Report refers to the scheme started by the N.F.B.T.E. whereby firms find appropriate occasions to put selected proposals into practice and report their observations. Two in hand at present are the use of air-entrained sand-cement mixes for external rendering and internal undercoats for plaster, and the use of zinc oxychloride paint to prevent spread of dry rot. Small beginnings which can become established and weather all the storms are better than elaborate schemes where the response is uncertain, but it will be a long way before we get experimental assemblies put up this way.

### Fuel Ash

Fuel ash bricks, publicized by the Allen-Mills act at the R.I.B.A. Conference last year, are referred to. We will all flock to the first accessible job to be built with these bricks, so there is some publicity for some architect somewhere. Fuel ash can, apparently, be made into a lightweight aggregate. If it is cheaper than some of the lightweight aggregates at present on the market, it should interest architects considerably.

### Prestressed Concrete

The Report implies that a design basis is now developed for giving protection to prestressed concrete so that periods of fire resistance as set out in the model byelaws can be achieved. It suggests that . . . "in prestressed

[Continued on page 489]



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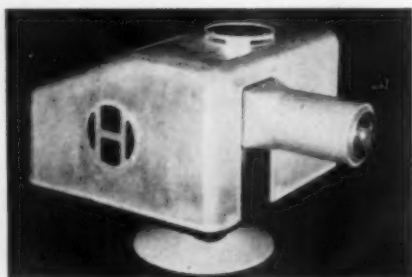
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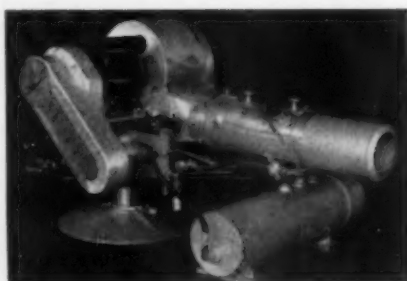
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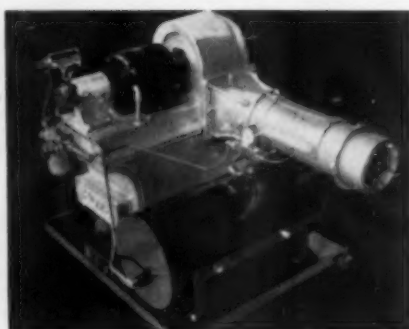
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beams the fire resistance increases uniformly with the cross-sectional dimensions of the beam." What this means in feet and inches will be interesting and it may cheer many architects caught on the tridents of local authorities' surveyors who are inclined to interpret these requirements rather harshly.

It is also suggested that larger allowances should be made for creep in prestressed concrete; the prestress may ultimately be reduced to 80 per cent of its initial value, but where this allowance has not been made, the factor of safety will not, apparently, be reduced, but only the tendency to show cracks will be greater. This is reassuring.

#### Central Heating in Flats

This has always been a headache to housing authorities. It would appear sensible to provide heat centrally, but there is no incentive for the tenant to be economical, nor can he save some cash by doing without it altogether. Many quite advanced schemes for flats lately have saddened admirers by showing batteries of flues wiggling their way up the section again just like 30 years ago. The Report refers to work on heat meters, which unfortunately will have to be read by another man in a special hat. It also refers to work on shunt flues, apparently a system where a common flue serves several fireplaces (women clients will at last be right!) and to work on natural ventilation of internal bathrooms and W.C.s. The answers to these will be very interesting.

Work is also being done by the British Coal Utilization Research Association on forced circulation through small bored pipes for central heating. Their work on free-standing convector fires can now be seen in any ironmonger's shop.

#### Savings in Cost of Building

Two items which show substantial savings to someone are single stack plumbing, 40 per cent to 50 per cent over conventional methods, and rail mounted tower cranes used for 2- and 3-storey buildings, 20 per cent of labour costs and building time on well organized jobs and perhaps double this on average efficiency jobs. There would appear to be a great future for both of these, though proper understanding of each in their very different fields is essential. It is again the question of the principle being good but the design for each job needing some wet towels round the head.

#### Fuel Cost

A snippet of interest is on domestic expenditure on heating, from a survey of town dwellers in 1952. It showed that people in the south who were not allowed so much coal as the people in

the north, spent the saving and more in extra gas and electricity. The poor man, apparently, spends as much as 15 per cent of his income on fuel and the average local authority householder about 6 per cent to 8 per cent of his income.

#### Modular Co-ordination

This inevitably creeps into the Report. It is rammed down our throats by Mr. Hartland Thomas and others so much now that when I hear the horrid phrase I want to scream, but I suppose it is good for us, like Enos, and will purge any tendency to immodular casualness, so that if we see it and hear it every day, we will ask for it and later demand it for all our work.

#### Prefab. Components

The rather dreary job of getting a real picture of how much factory-made components and dry-finished interiors really help in housing goes steadily on and may achieve something more important than other more spectacular work. Five local authorities are building 400 houses in four different forms of construction as part of this investigation.

DENZIL NIELD

### TIMBER NOTES

WITH sufficient softwood now bought to cover the whole of industry's requirements for this year, the softwood importers are no longer ready buyers in the overseas markets. All the purchases have been made at high prices, with no weakening at any time. As this buying will take care of all the timber sold to users this year, and even into the first few months of 1956, it can be seen there must be little chance of any material change in the present selling prices of softwood, at least for some time ahead.

Good Swedish joinery redwood has been steady at £86 a standard f.o.b. Russian whitewood has been selling at £85 a standard c.i.f., but sales have been slow and quantities have been withdrawn from the market at this price. About 15,000 standards of softwood, mainly hemlock and Douglas fir, but with some Russian and Yugoslav timber, have been placed on the market by the Timber Directorate from the strategic reserve stock. This wood no longer comes up to the standard required for such a stock, though the hemlock is being cleared as a policy measure, for it has been decided to exclude hemlock from the stock in future in view of its poor keeping qualities in open storage after a long spell. Tenders are being invited for these deteriorated Timber Directorate items, and buying usually depends upon nearness to the sites from which the parcels are offered. Few can afford to submit competitive tenders if they have to take the timber any great distance by road from the stockyard to their own yards.

Import licences have now been issued

to the hardwood consumers and importers for the purchase of hardwoods from the dollar countries, these imports (to the value of £3,000,000 a year) being in addition to the quantities permitted under special Government licences, and they may be used for any purpose. This will lead to supplies of American oak and maple for use in building work, especially flooring, and architects will welcome the wider selection which will shortly be available. This change in importing arrangements is not now expected to have any marked effect upon hardwood prices generally.

A new price list, with the code name ENGAS, has been issued by the Finnish plywood exporters, and this means a slight increase in prices of about 2 per cent on the whole, though the better qualities are reduced by as much as 4 per cent when compared with the old CIFCO price list. The new list is necessary because it is based on a larger press size. Large imports of Finnish and Russian plywood have been arranged for this year to meet the increasing demand from the consumer industries. Plywood consumption is now matching pre-war use.

Price-cutting is a feature of the insulation and hardboard trade at the moment. Large imports are now reaching the country, and this volume will increase over the next couple of months. Some firms are anxious to maintain a high turnover, and to achieve this are making sales at prices which will hardly show a profit at all on the replacement cost of the material. The importing freedom has now eliminated the shortages which hampered the building trade in the last months of 1954.

#### Open Days at Road Research Laboratory

The Road Research Laboratory, D.S.I.R., has arranged two open days this year, on Thursday, May 12, and Friday, May 13. Both the Materials and Construction Division at Harmondsworth and the Road Safety Division at Langley will be exhibiting their latest research work. The Laboratory will be open from 10 a.m. to 5 p.m. There will be practical demonstrations throughout the day at both Divisions to illustrate the methods and processes evolved from research. Application for cards of invitation should be made to the Director of Road Research, Road Research Laboratory, Bath Road, Harmondsworth, Middlesex.

#### Uganda and Trinidad Builders Affiliate to N.F.B.T.E.

Applications for affiliation submitted by the Uganda Association of Building and Civil Engineering Contractors and the Trinidad and Tobago Building and Allied Trades Employers Association have been accepted by the National Federation of Building Trades Employers.

The total number of overseas builders' organizations affiliated to the National Federation is now fifteen.

## MOSAICS

### SERVICES PLUMBING AND WATER SUPPLY B4/28

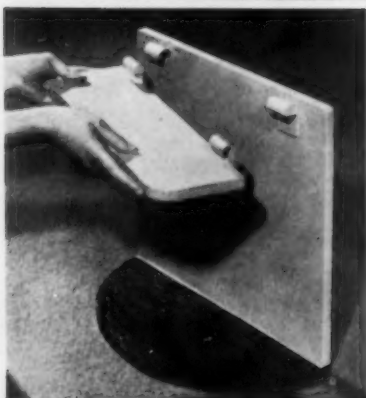


The "Twinsal"  $\frac{1}{2}$ in and  $\frac{3}{4}$ in bib tap is made by Byrom Manufactures Ltd., Trafford Park, Manchester, 17. It does not rely on a washer and need not be screwed down hard. Instead a piston, fitted with two special ring seals, slides smoothly up and down a polished cylinder, cutting off the water supply before the tap has been turned to the fullest extent. The sealing action is made more secure by the water pressure expanding two resilient seals which are claimed to be highly resistant to abrasion, unaffected by steam, water, oil or petrol. Finished in chromium plate, the "Twinsal" range includes pillar and globe taps, wall, pillar and bucket mixers.



### SERVICES VENTILATION B2/25

The new "Two-Way" fan, by Colt Ventilation Ltd., of Surbiton, Surrey, simultaneously extracts the vitiated air from the room in which it is installed and replaces it with clean air from outside the building, all by means of the one fan. It is claimed that the "Two-Way" is draughtless, that complete scavenging of vitiated air is effected and that short-circuiting of the fan by opening adjoining windows is impossible. Accessories are provided to filter or warm the incoming air, thus giving a completely balanced system of ventilation.



### FITTINGS MISCELLANEOUS C11/7

The "Oznel" shelf couplings are a product of Oznel Couplings Ltd., 65 High Street, Sutton, Surrey. The rustless couplings are made from pressure die castings in mazzac 3 and can be painted or enamelled. The set consists of a left and right wall piece which should be screwed to the wall. The corresponding shelf pieces having been screwed to the back edge of the shelf can then be hooked onto the wall pieces. To provide additional strength a cantilever supporting arm is included in the set which retails at 6s. including Rawlplugs, screws and fixing instructions.



### PLANT HAND AND BENCH TOOLS E3/38

The "Universal" self-adjusting spanner, of German manufacture, is being marketed in this country by Riso Trading Agency, 377 St. John Street, London, E.C.1. There are three spanners in the set, i.e.  $\frac{5}{16}$ in,  $\frac{7}{16}$ in and  $\frac{1}{2}$ in long. They handle nuts from  $\frac{1}{4}$  to  $\frac{1}{2}$ in,  $\frac{1}{2}$  to  $\frac{3}{4}$ in and  $\frac{3}{4}$  to 1in and weigh about 3oz, 9oz and 22oz respectively. The set of three spanners retails at £2.

## INDUSTRIAL NOTES

● The Board of Trade announces the making of the Export of Goods (Control) (Consolidation) Order 1955. This new Order incorporates for the convenience of exporters the 1954 Consolidation Order and subsequent amendments. No change is made in the law. Copies of the Order, from H.M. Stationery Office, Kingsway, London, W.C.2, and branches, or through any bookseller, price 1s (by post 1s 1½d). The Board of Trade also announces the following census of production reports were published on April 6: Coke Ovens and By-Products Volume 2, Trade A, price 1s 6d, and Wrought Iron and Steel Tubes Volume 3, Trade F, price 1s 6d.

● Anyone who is thinking of buying a new car this spring will be interested in a special "British Cars and Accessories" number which our associated journal, *The Autocar*, is publishing on April 29. This will list the specifications, prices and performance data for some 80 British models (compiled in collaboration with the manufacturers concerned, and *The Autocar's* own impartial Road Tests) and include full information on the latest accessories and components.

● The Expanded Metal Co., Ltd., of West Hartlepool and London, announces that Mr. Frank Banfield, general manager for the past year, has been appointed managing director. He succeeds Lt. Cdr. G. C. Hans Hamilton.

● The British Glass Industry Research Association, formed under the auspices, and with the encouragement, of the Department of Scientific and Industrial Research, was registered as a company, limited by guarantee, on October 9, 1954.

The establishment of this new research organization marks an important step in the scientific and industrial development of the British Glass Industry. But, unlike other newly formed research associations, it does not have to inaugurate its research; it will take over from the Department of Glass Technology of the University of Sheffield and will thus continue the tradition of research work begun there during the first world war. This research, in conjunction with the teaching and training of students of glass technology, was administered by the Glass Delegacy of the University of Sheffield.

As from April 1, 1955, the British Glass Industry Research Association and the Department of Glass Technology will be separately administered, although they will share the same University buildings at "Elmfield," Northumberland Road, Sheffield, 10.

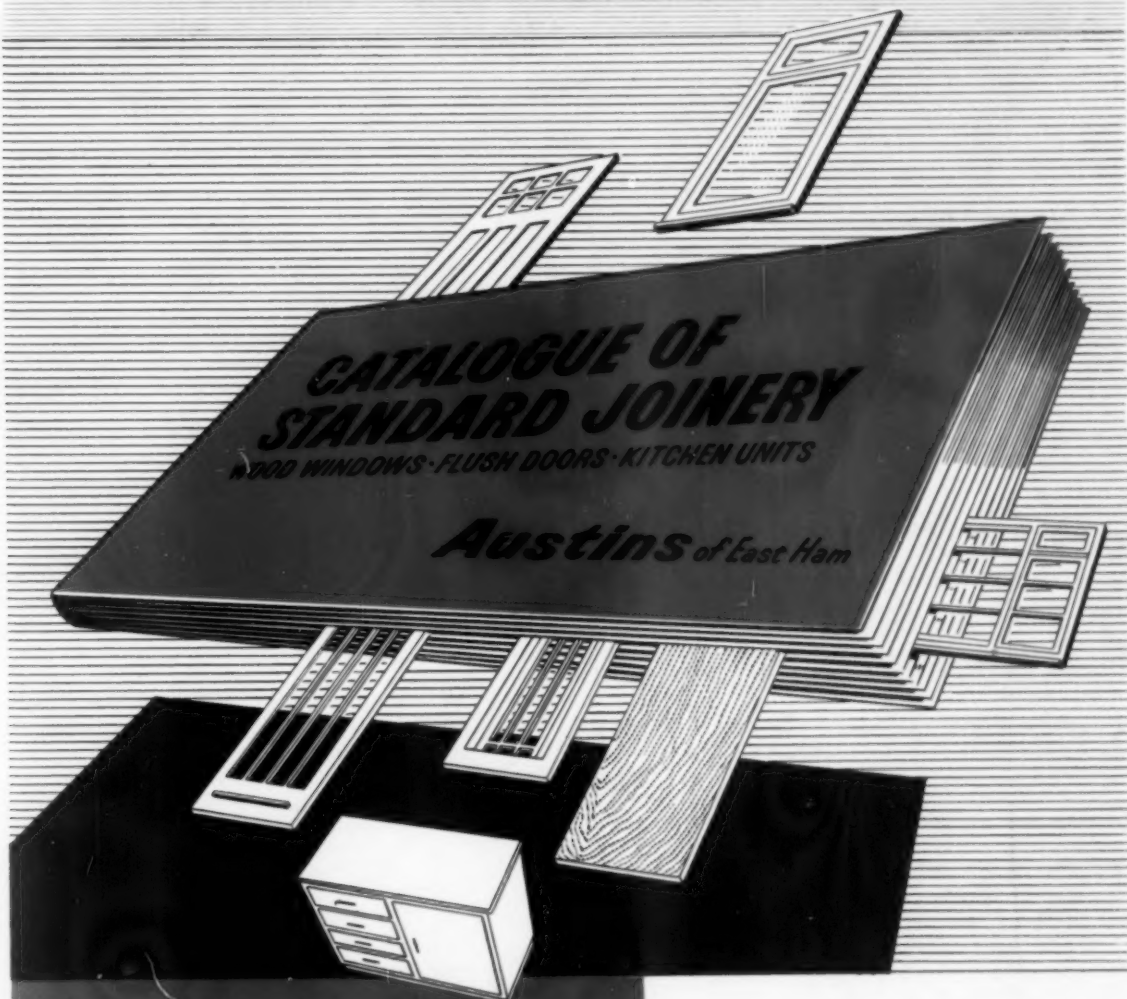
Dr. R. G. Newton has been appointed Director of the Research Association and Dr. D. K. Hill Assistant Director.

Mr. R. W. Douglas has been appointed to the Chair of Glass Technology at the University of Sheffield in succession to Professor H. Moore, who is retiring at the end of the session.

● The Metal Window Association, Ltd., announces the introduction of an alternative range of standard metal door frames for housing, in 18 gauge sheet steel. Sizes, fittings, finish and specification (except for the thickness of sheet) will be the same as in the existing standard range of 16 gauge frames, but prices will be lower.

To coincide with the distribution of their new machine tool catalogue MT.555, F. J. Edwards, Ltd., of Edwards House, 359-361, Euston Road, London, N.W.1, announce that they are holding a special machine tool exhibition at the FJE Machine Centre, Islington Park St., London, N.1. It opens on Monday, May 2, and closes on Saturday, May 14, 1955.

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'Random-fibre' sheets to D.S.I.R. and L.C.C. Joint Specification (Copy of test report No. FROSI 551 available on request). Thickness, approximately  $\frac{1}{8}$  in.; weight, approx.  $\frac{1}{2}$  lb. per square foot. Made in profiles to match iron, aluminium and asbestos equivalents up to 43 in. nominal width, in lengths of 3 ft., then by steps of 6 in. up to 8 ft. Maximum light transmission 75%; transmits diffused natural light with glare-free illumination.

GRADE B (NOT fire-resistant) 'Woven' sheet, in profiles and sizes to match iron, aluminium and asbestos equivalents up to 30 in. nominal width, lengths as for Grade A. Thickness approx.  $\frac{1}{8}$  in.; weight approx.  $\frac{5}{6}$  ounces per square foot. Light transmission as Grade A.

GRADE C (NOT fire-resistant) 'Random-fibre' sheet, profiles, size, thickness and weight as Grade A, but light transmission 85%.



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EX 4" X 2" FILLET

6" X 2" RAFTERS AT 16" C-C

1/2" PINE FASCIA

3/4" PLYWOOD SOFFIT

1 1/2" X 1/2" COVER MOULD

DOUBLE GLAZED UNIT

OPENING LIGHT

MESH SCREEN

WEATHER STRIP

DOUBLE DOORS

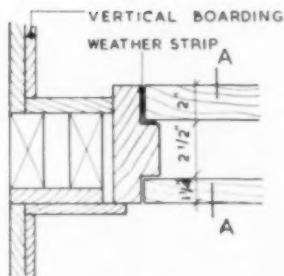
EX 6" X 3" FRAME

EX 7" X 2 1/2" THRESHOLD

TRIMMER

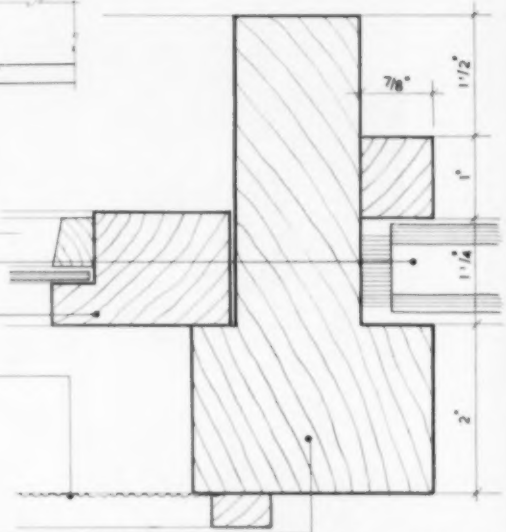
1/2" PINE FACING ON BUILDING PAPER

SECTION A-A • 1 1/2" TO 1' 0"

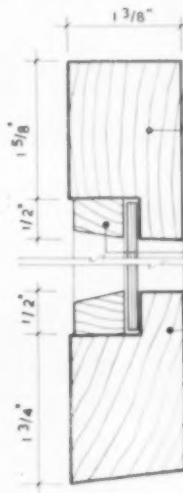


PLAN OF JAMB AT ENTRANCE DOOR

EAVES DETAIL  
• 1 1/2" TO 1' 0"



DETAIL OF JUNCTION BETWEEN OPENING CASEMENT & DOUBLE GLAZED WINDOW  
• 1/2 F.S.



JOINERY DETAILS OF OPENING CASEMENT  
• 1/2 F.S.

EX 5 1/2" X 1 1/2" TOP RAIL, STYLES SIMILAR

5/8" X 3/8" COVER MOULD

1/4" TIMBER LOUVRES

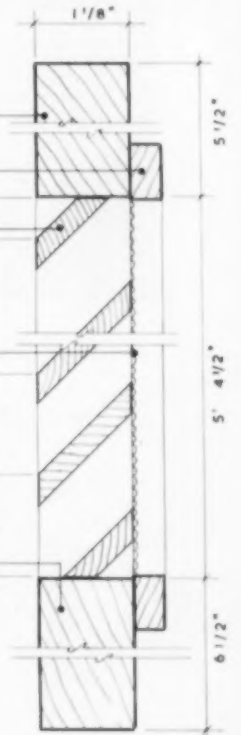
EX 2 1/2" X 1 1/2" TOP RAIL & STYLES

MESH SCREEN

EX 1/2" X 1/2" GLAZING BEAD

EX 2 1/2" X 1 1/2" BOTTOM RAIL

EX 6 1/2" X 1 1/2" BOTTOM RAIL



DETAILS OF OUTER LOUVRED DOOR



WINDOW AND DOOR DETAIL: HOUSE AT MAINE

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We confess that we were not surprised to find the exterior looking young, healthy and full of fight not a day less than eighteen months later.

If a small moral were permissible it might be that though Blundells are not the loudest to shout their claims from the roof-tops, the surfaces which bear their paints will tell the story far more satisfactorily.

We shall be pleased to give you fuller information about PAMMEL—and its notable complementaries, PAMMASTIC the Plastic Emulsion Coating, and PAMMELETTE—Blundell's superfine eggshell enamel.

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Upper photograph of a Kinnear Shutter 16'0" high x 34'0" wide, was taken in 1926 when 53 of these shutters were installed.



The lower photographs illustrate two of the many Kinnear Shutters which passed through the disastrous fire of 9th November, 1949, "by far the largest single fire in the United Kingdom during the year."

(vide F.P.A. report)



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Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the

## CONTRACT • NEWS •

### OPEN

#### BUILDING

**ABERDARE U.C.** (a) (1) 14 houses in blocks of 2, with drains and sewers, at Peynwaun, Aberdare; (2) construction of a 3in water main and pavement works in connection therewith. (b) Council's Engineer, Vestry Hall. (c) £2. (e) April 30.

**BASILDON U.C.** (a) 60 houses, Pound Lane site, Laidon. (b) Engineer and Surveyor, Council Offices, 108, High Street, Billericay. (c) 2gns. (d) April 23.

**BIRKENHEAD B.C.** (a) 70 houses and 30 flats, Woodchurch Estate. (b) Borough Architect, 3, Conway Street. (c) 2gns.

**BRAINTREE AND BOCKING U.C.** (a) 8 flats, Coldnailhurst Avenue, Church Lane Estate. (b) Council's Engineer, Town Hall, Braintree. (c) 2gns. May 2.

**CARDIFF C.C.** (a) 92 maisonettes, Hodges Row, Bute Street. (b) City Surveyor, City Hall. (c) 2gns. (e) June 8.

**COVENTRY CORPORATION.** (a) Nursery school, Barley Lee, Stoke Aldermoor. (b) City Architect, Bull Yard. (c) 2gns by April 28. (e) June 1.

**CRAWLEY DEVELOPMENT CORPORATION.** (a) 674 bungalows, 4 houses, 151 flats and 121 garages, Southgate-East. (b) Chief Architect, Broadfield, Crawley. (d) April 29.

**CROYDON B.C.** (a) 96 garages on sites adjacent to Kennelwood Crescent, Calley Down Crescent, Redstart Close and Headley Drive, New Addington Estate. (b) Borough Engineer, Croydon.

**CROYDON B.C.** (a) Erection of a second instalment of the Croydon Technical College, Fairfield site, Park Lane, Croydon. (b) Messrs. Robert Atkinson and Partners, 13, Manchester Square, London, W.1. (c) £1. (e) May 24.

**CUCKFIELD R.C.** (a) Contract No. 110. 12 dwellings, Copthorne. (b) Engineer and Surveyor, Rural Council Offices, Boltro Road, Haywards Heath. (c) 2gns. (e) May 16.

**DAGENHAM B.C.** (a) 64 maisonettes, 36 flats and 10 houses, Marks Gate Estate. (b) Borough Engineer, Civic Centre. (c) 2gns. (e) May 7.

**DEAL B.C.** (a) 42 houses, St. Martins Road site. (b) Borough Engineer, Municipal Offices, Queen Street. (c) 2gns cheque. (e) May 10.

address it is the same as the locality given in the heading. (c) deposit, (d) last date for application, (e) last date and time for submission of tenders. Full details of contracts marked ★ are given in the advertisement section.

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**EASTBOURNE B.C.** (a) Erection of (Section No. 1) 44 houses, and (Section No. 2) 42 houses, Ocklynge Estate. (b) Borough Surveyor, 2, Saffrons Road. (c) 2gns each section, cheque payable to Corporation. (d) April 27. (e) May 25.

**ESSEX C.C.** (a) Health Services Clinic, Couchmore Avenue, Ilford. Approx. cost £10,000. (b) County Architect, County Hall, Chelmsford. (d) April 30.

**ESSEX RIVER BOARD.** (a) Erection of an area office at Fenn Road, Halstead. (b) The Engineer, Rivers House, Springfield Road, Chelmsford. (c) 2gns. (e) May 13.

**GREAT YARMOUTH B.C.** (a) Erection of a girls' high school, Gorleston. (b) F. Jackson, 22, Euston Road. (c) 2gns. (e) May 14.

**LEEDS REGIONAL HOSPITAL BOARD.** (a) Alterations and extensions to the pathological laboratory, Royal Halifax Infirmary. (b) Architect to the Board, Park Parade, Harrogate. (c) 2gns. (e) May 24.

**LEICESTER C.C.** (a) 19 shops with maisonettes over, Nether Hall Estate. (b) City Architect, Municipal Offices, Charles Street. (c) £3. (e) May 17.

**LONDON—WALTHAMSTOW B.C.** (a) Erection of (1) 6 flats at Clifford Road-Forest Road, E.17, and (2) 10 flats on a site at Bisterne Avenue-Fyfield Road, E.17. (b) Borough Architect, Town Hall, E.17. (c) 2gns. (e) April 29.

**LONDON—WANDSWORTH B.C.** (a) 10 flats, Hazelhurst Road, Tooting. (b) Town Clerk, Municipal Buildings, S.W.18. (d) May 4.

**LONDON—WANDSWORTH B.C.** (a) 10 houses and 28 maisonettes and 157 flats, West Hill, Putney. (b) Town Clerk, Municipal Buildings, S.W.18. (d) April 27.

**MARKET HARBOUR U.C.** (a) 10 houses, Southern Estate. (b) Lyndon Rowen, Esq., 39, High Street.

**NORFOLK E.C.** (a) Erection of (1) 2 classrooms at Attleborough primary school, (2) changing room and kitchen extension at Dersingham secondary school, (3) 4 classrooms at Hellesdon infants' school, (4) a hall at Terrington secondary school, (5) science laboratory and 2 classrooms at Thetford girls' school, (6) biology and practical rooms at Upwell secondary school, (7) 2 classrooms at Wells secondary school, (8) 5 classrooms at Wymondham secondary school, and (9) provision of water closets, lavatory basins, and erection of kitchen at Whissonsett primary school. (b) Chief Education Officer, County Education Offices, Stracey Road, Norwich. (d) April 27.

**NORTHAMPTONSHIRE C.C.** (a) (1) Erection, (2) heating installation, or (3) electrical installation at Corby Fire and Ambulance Station, Kettering Headlands Fire Station (second instalment), Northampton Ambulance Station, Rushden Ambulance Station, Brixworth Fire Station (erection only), and 3 nurses' flats at Wellingborough (erection only). (b) County Architect, County Hall, Northampton. (d) April 26.

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**N. IRELAND—DOWN BOARD OF GOVERNORS.** (a) New intermediate boys' and girls' school, Kilkeel. (b) P. J. Davidson, 16, High Street, Belfast. (c) 5gns. (e) May 2.

**N. IRELAND—GOVERNMENT OF NORTHERN IRELAND.** (a) Erection and completion of extensions to the Telephone Exchange and Post Office Buildings, Londonderry. (b) Ministry of Finance (Room 103), Law Courts Building, May Street, Belfast. (c) £5. (e) May 12.

**NORWICH C.C.** (a) Six dwellings, Rosary Road. (b) City Architect, City Hall. (c) May 2.

**OLDBURY B.C.** (a) 24 maisonettes at Stone Street and Lodge Street. (b) Messrs. Bridgewater and Coulton, 17, George Road, Edgbaston, Birmingham. (c) 2gns cheque. (d) April 23. (e) May 27.

**OLDHAM B.C.** (a) 17 houses, 32 houses and 36 houses, Holts Estate. (b) Messrs. Cameron and Middleton, 21, Queen Street. (c) 2gns. (e) May 12.

**PETERBOROUGH JOINT EDUCATION BOARD.** (a) (1) New laboratory block, (2) alterations to swimming pool, (3) site works, (4) alterations within existing school, at Grammar School for Girls, Lincoln Road. (b) Messrs. Ruddle and Wilkinson, Long Causeway Chambers, Peterborough. (c) 2gns.

**ST. GERMAN'S R.C.** (a) 2 pairs of houses, West Lane, Crafthole. (b) Council's Surveyor, "St. Germans," Lower Port View, Saltash. (c) 2gns. (e) May 4.

**SCOTLAND—PRESTONPANS B.C.** (a) 24 houses at Redburn Road, High Street and Pyper's Wynd. (b) Messrs. R. and A. K. Smith, 4, Forbes Street, Edinburgh 3.

**SCOTLAND—SCOTTISH SPECIAL HOUSING ASSOCIATION, LTD.** (1) 248 houses and flats, Bellsmyre site, Dumbarton. All or separate trades. (b) The Scottish Special Housing Association, Ltd., 15-21, Palmerston Place, Edinburgh 12.

**SHEFFIELD C.C.** (a) Erection of East Hill Special Schools, East Bank Road. (b) City Architect, City Architect's Department, Town Hall, 1. (c) £2. (e) May 6.

**SOUTHBOURGH U.C.** (a) 29 houses and flats, Powder Mill Lane site. (b) Messrs. Howes and Jackman, 1, Verulam Buildings, Gray's Inn, London, W.C.1. (c) 2gns. (e) May 9.

**SWALE R.C.** (a) 36 houses and a block of 10 garages, Iwade. (b) Council's Engineer, 48, Bell Road, Sittingbourne. (c) 3gns. (e) May 9.

**WEST SUSSEX C.C.** (a) Erection of New Thorney Island primary school. (b) County Architect, County Hall, Chichester. (d) May 7.

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authority in bold type with (1) type of work,  
(2) site, (3) name of contractor and address,  
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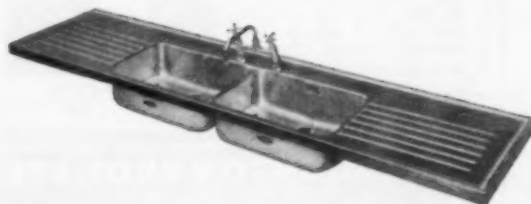
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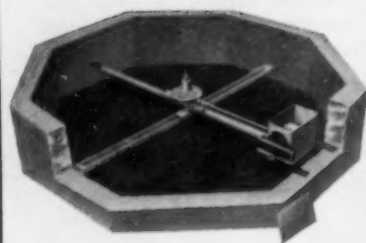
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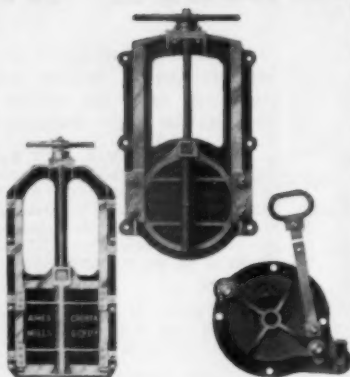
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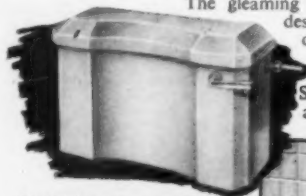
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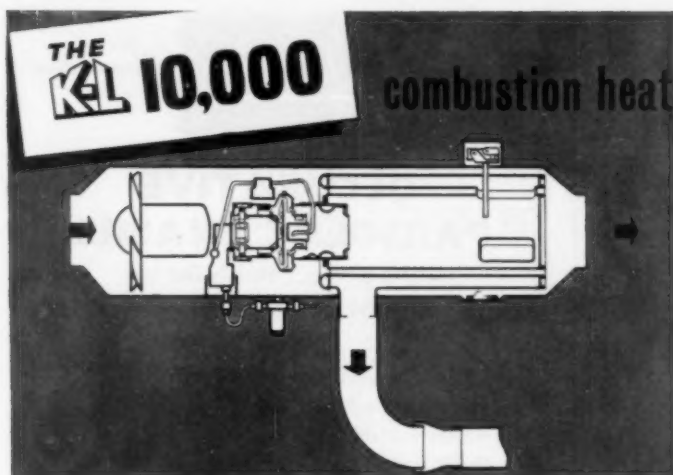
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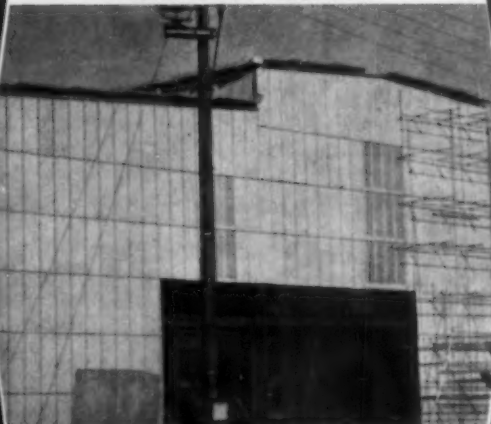
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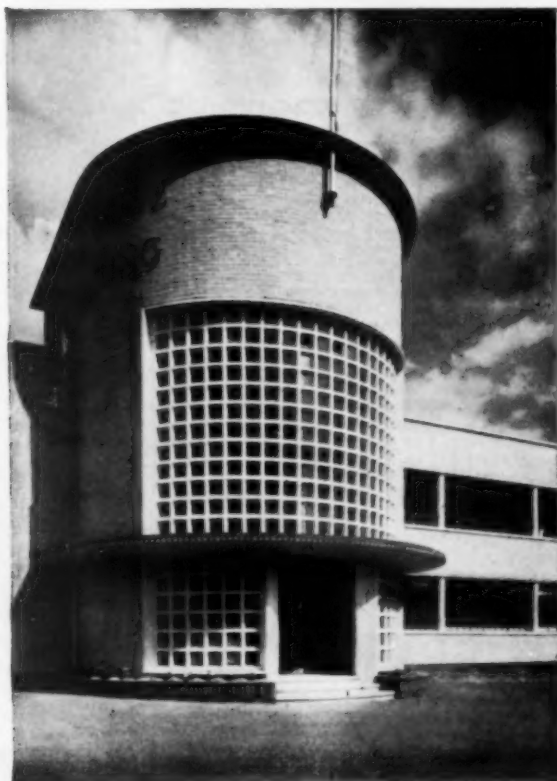
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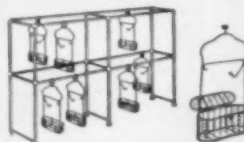
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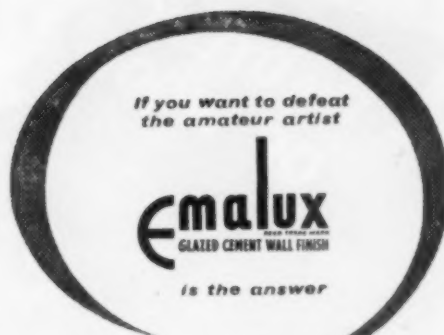
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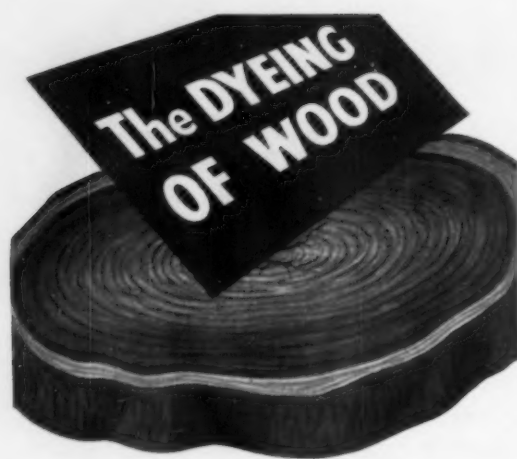
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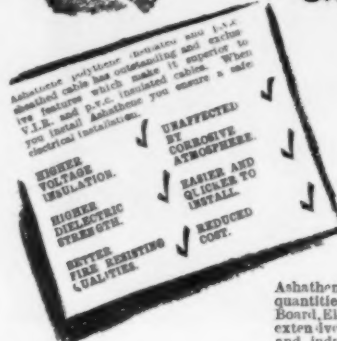
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# OFFICIAL ANNOUNCEMENTS

## APPOINTMENTS • CONTRACTS • TENDERS

Rate 1/6 per line, minimum 3/-

Close for press 1st post Monday for following Thursday Issue

### APPOINTMENTS

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is exempted from the provisions of The Notification of Vacancies Order, 1952.

#### SINGAPORE IMPROVEMENT TRUST.

APPLICATIONS are invited for appointment of an Assistant Architect on a three years' Agreement in the first instance.

Applicants must be qualified A.R.I.B.A. by examination with not less than 5 years' post qualification experience.

Basic Salary Scale \$630-\$1,200 per month. Commencing basic salary \$790 p.m. Expatriation allowance \$205-\$275 p.m. and variable Cost of Living Allowance (i) Single Officer \$170-\$160 p.m. (ii) Married Officer without children \$241-\$275 p.m. (iii) Married Officer with children \$322.50-\$400 p.m. payable. An allowance will be paid to cover cost of duty transport. All allowances are subject to revision. (\$1 Malayan=2s 4d.) For example a married officer with children on a basic salary of \$790 p.m. would receive a total salary, including current allowances equal to £1,950 per annum.

Strict medical examination. Provident Fund to which the appointee must contribute a minimum of 7½% of his basic salary, the Trust contribution is 7½% rising by stages to 20% after 20 years' service. Leave and passages in accordance with Regulations. Furnished quarters provided at 6% of basic salary or, if not available, housing allowance, 10% of basic salary, paid in lieu.

Applications in duplicate giving full personal and technical information with copies of recent testimonials in duplicate to Messrs. Allen & Williams, 1, Victoria Street, London, S.W.1, before Thursday, May 12th, 1955. [9090]

#### NATIONAL COAL BOARD—EAST MIDLANDS DIVISION.

#### ARCHITECTS DEPARTMENT, MILTON STREET, NOTTINGHAM.

APPLICATIONS are invited for the following permanent and supernumerary appointments. Supernumerary rights under Local Authority Schemes are transferable.

S.V. 387—Architects Grade II.

Salary £600×£25—£650×£30—£900. Candidates should be Corporate Members of the R.I.B.A.

S.V. 388—Architectural Assistants Grade I.

Salary £525×£25—£650 (exceptionally to £800). Candidates should be of R.I.B.A. Intermediate Standard and have had not less than 3 years' subsequent practical experience. Facilities are granted in certain circumstances to Assistants for part-time study at the Nottingham School of Architecture.

S.V. 389—Quantity Surveyor Grade I.

Salary £900×£35—£1,200. Candidates should be Corporate Members of the R.I.C.S. with considerable experience.

The grade and point of entry into the above salary scales will depend on the qualifications and experience of the applicant.

The architectural work of the Department covers the design of Colliery Surface Buildings of all types required in the Division, including Workshops, Stores, Power Plants, Offices, Pithead Baths, Canteens, Medical Centres, Institutes and Recreation Buildings.

Applications, stating age, education, qualifications, present appointment and salary should be submitted within 14 days of publication to:—

The Secretary,  
National Coal Board,  
East Midlands Division,  
Sherwood Lodge,  
Arnold,  
Notts.

Envelopes and applications should be marked with the appropriate S.V. reference number. Original testimonials should not be sent. [8996]

### APPOINTMENTS—contd.

#### GEORGE WIMPEY & CO., LIMITED.

THE Architects' Department seek architectural staff enthusiastic to apply their knowledge to new construction techniques covering Houses, Multi-Storey Flats, Offices, Schools and Industrial Buildings for contracts in the U.K. and Overseas.

Appointments range from Architects to Draughtsmen with special interest to those of ability, recognising the value of the designer and technician as an integral part of the production team.

Appointments are on a permanent basis, 5 days a week at Head Office, Hammersmith.

Salaries will be according to qualifications and experience, and, subject to satisfactory service, there is a Pension Scheme for those wishing to make a career with the firm.

Applicants should write giving brief particulars to E. V. Collins, A.R.I.B.A., Chief Architect, George Wimpey & Co., Ltd., 27, Hammersmith Grove, London, W.6. [9018]

#### EBBW VALE URBAN DISTRICT COUNCIL.

##### ARCHITECT'S DEPARTMENT.

##### PROPOSED NEW CIVIC CENTRE.

##### APPOINTMENT OF ASSISTANT ARCHITECT.

APPLICATIONS are invited from Registered Architects, preferably Corporate Members of the R.I.B.A., for the above appointment in the Architect's Department.

The person appointed will be engaged mainly upon duties in connection with preliminary work for the development of the new Civic Centre which will incorporate Municipal Offices and Public Hall in addition to other buildings.

The salary will be in accordance with the Scales for Architectural Assistants A.P.T. Grade II(d) £650×£25—£775 per annum.

The appointment is intended to be for the duration of the scheme, subject to satisfactory service, and will be subject to the National Conditions of Service as adopted by the Council, to the provisions of the Local Government Superannuation Acts and to three months' notice on either side. The successful candidate will be required to pass a medical examination.

Applications, stating age, particulars of training, qualifications, experience, past and present appointments, together with the names and addresses of two referees to whom reference may be made, should be addressed to the undersigned to reach him not later than Saturday, the 30th April, 1955.

Canvassing will disqualify.

J. J. WILLIAMS,

Deputy Clerk of the Council.

District Council Offices,

The Walk,

EBBW VALE, Mon. [9062]

#### URBAN DISTRICT OF ELLESMERE PORT.

##### APPOINTMENT OF ARCHITECTURAL ASSISTANT.

APPLICATIONS are invited from qualified and experienced men for the above appointment on the permanent salaried staff of the Engineer and Surveyor to the Council. Applicants must have had considerable experience in design and construction, particularly in relation to housing. The salary to be offered will be within Grade III of the A.P.T. Division of the National Salary Scales (£625—£725 per annum). The weekly tenancy of a Council house will be offered to the successful applicant on appointment if he reasonably requires housing accommodation for his family.

Applications, stating age, qualifications and experience, on the Form provided, which may be obtained on application to the Council's Engineer and Surveyor, together with the names and addresses of two persons, having knowledge of the applicant's experience and antecedents, to whom reference can be made, must reach me by not later than April 23, 1955.

Council Offices,

Ellesmere Port.

April 6, 1955.

P. J. HODGES,

Clerk of the Council. [9028]

### APPOINTMENTS—contd.

#### LONDON COUNTY COUNCIL.

##### ARCHITECT'S DEPARTMENT.

VACANCIES for ARCHITECTS, Grade III (up to £892 10s), and ARCHITECTURAL ASSISTANTS (up to £739 10s), in Schools and Housing and General Divisions.

Particulars and application forms from Architect (AR/EK/A/3), County Hall, S.E.1. (1058). [0146]

AIR MINISTRY Works Designs Branch requires in London and Provinces (with liability for overseas service) Architectural Assistants, experienced in planning/preparation and semi-permanent buildings, salaries up to £810 p.a. for men and £690 for women, starting pay dependent upon age, qualifications and experience, extra duty allowance or overtime payable; posts non-pensionable with long-term possibilities; natural born British subjects only. Write, stating age, qualifications, employment details, including type of work done, to Ministry of Labour, 236, Walworth Rd., London, S.E.17, quoting Order 81/AB. [8744]

#### UNIVERSITY OF SHEFFIELD.

ARCHITECTURAL ASSISTANT (SENIOR) required for Surveyor's Office. Capable of preparing Surveys, Working Drawings, detailing and supervision of alteration work of jobs from £500 to £20,000. Commencing salary £750 plus child allowances. Superannuation scheme. Send details of age, experience and qualifications to the Bursar, The University, Sheffield, 10. [9061]

#### SALOP COUNTY ARCHITECT'S DEPARTMENT.

SENIOR ASSISTANT ARCHITECT required; salary grade A.P.T. V (£750 to £900 p.a.). Applicants must be Members of the R.I.B.A.

A separation allowance of not exceeding 30s a week will be paid to a married officer taking up this appointment, together with third-class return railway fare once a month to visit his family, such allowances to be limited to a period of six months or until such time as the officer is able to obtain accommodation for himself and his family in Shropshire, whichever is the earlier.

Conditions of appointment and forms of application obtainable from County Architect, Column House, London Road, Shrewsbury, returnable with three testimonials, not later than May 6th, 1955. [9087]

#### BOROUGH OF LEYTON.

APPLICATIONS are invited for the appointment of GENERAL ARCHITECTURAL ASSISTANT, Grade A.P.T.II (£360-£640 per annum, plus London Weighting Allowance according to age, which at 26 years is at a maximum of £30).

Candidates should have passed the Intermediate Examination of the R.I.B.A. and must have had good experience in the design and construction of houses, flats and municipal buildings.

Details of appointment and form of application may be obtained from Mr. H. D. Peake, M.Sc.(Eng.), Borough Engineer and Surveyor, Town Hall, Leyton, E.10, to whom they should be returned not later than Friday, 6th May, 1955.

D. J. OSBORNE,

Town Clerk.

Town Hall,

LEYTON, E.10. [9056]

#### WORCESTERSHIRE COUNTY COUNCIL.

##### COUNTY ARCHITECT'S DEPARTMENT.

APPLICATIONS are invited for the permanent post of Building Inspector in connection with minor building works and maintenance of properties in the Southern part of the County. Salary within A.P.T. II (£560-£640). Further particulars and forms of application may be obtained from L. C. Lomas, F.R.I.B.A., County Architect, 14, Castle Street, Worcester, not later than April 30th. (X.43.) [9085]

## APPOINTMENTS—contd.

## BOROUGH OF MACCLESFIELD.

APPLICATIONS are invited for the appointment of Architectural Assistant in the Borough Architect's Department.

Applicants should have passed the Intermediate Examination of the R.I.B.A. and the salary will be within the new A.P.T. Grade II (£560-£640) according to experience.

Details and form of application may be obtained from the undersigned to whom it should be returned by May 2nd, 1955.

The successful applicant may, if suitable, be placed temporarily on the new A.P.T. Grade III during the absence of another officer.

W. ISAAC,  
Town Clerk.

Town Hall,  
Macclesfield,  
April 14th, 1955.

[9086]

## CITY OF MANCHESTER.

## CITY ARCHITECT'S OFFICE.

APPLICATIONS are invited for the following appointments:

## PERMANENT STAFF.

- SENIOR ASSISTANT QUANTITY SURVEYOR.** Salary Grade A.P.T.V £750/£900 per annum. Applicants must have had considerable experience as a Senior Assistant in the preparation of Bills of Quantities and Specifications, Interim Valuations and settlement of final accounts for all classes of local authority building work.
- SENIOR ASSISTANT QUANTITY SURVEYOR.** Salary Grade A.P.T.IV £675/£825 per annum. Applicants must have had considerable experience in the preparation of Bills of Quantities and Specifications, Interim Valuations and settlement of final accounts for all classes of local authority building work.
- ASSISTANT QUANTITY SURVEYOR.** Salary Basic Grade £650/£775 per annum. Applicants should have had at least five years' experience in the preparation of Bills of Quantities and Specifications, Interim Valuations and settlement of final accounts for all classes of local authority building work.
- DISTRICT BUILDING SURVEYOR.** Salary Grade A.P.T.II £560/£640 per annum. Applicants must have passed the Building Surveyors' examination of the R.I.B.A. or hold equivalent qualifications; be conversant with the Model Building By-laws and have a knowledge of the Factories, Public Health and Town Planning Acts. They should also have had experience in the supervision of building works and the treatment of dangerous buildings.

## TEMPORARY STAFF.

- SENIOR ASSISTANT ARCHITECT.** Salary Grade A.P.T.IV £675/£825 per annum. Applicants must be A.R.I.B.A. with some years' office experience.

Further particulars and forms of application may be obtained from the City Architect, Box No. 488, Town Hall, Manchester, 2. The completed form to be returned to the same address by 30th April, 1955. Canvassing is prohibited.

[9063]

**THURROCK URBAN DISTRICT COUNCIL.** (Engineer and Surveyor's Department) require an **ARCHITECTURAL ASSISTANT, A.P.T. IV (£675-£825 p.a.)**, to work under the Architect to the Council. Candidates should be Associates of the Royal Institute of British Architects and must be experienced in design, preparation of drawings, specifications and supervision of various building and architectural work undertaken by a Local Authority. The appointment is pensionable and travelling allowance in accordance with National Scales payable in respect of 8 h.p. car.

Housing accommodation, if necessary, may be provided for the successful candidate if he lives more than 20 miles from Thurrock.

Applications, endorsed "Architectural Assistant, A.P.T. IV," with copies of three recent testimonials to Clerk of the Council, Council Offices, Grays, Essex, by Tuesday, 3rd May, 1955. Canvassing disqualifies and applicants must disclose relationship to any Member or Senior Officer of the Council.

[9072]

## BEESTON AND STAPLEFORD URBAN DISTRICT COUNCIL.

## JUNIOR ARCHITECTURAL ASSISTANT.

GRADE II (£560-£640).

APPLICATIONS are invited for the above appointment, N.J.C. Conditions of Service. Applications, naming two referees, to the Surveyor, Town Hall, Beeston, Nottingham, by 2nd May, 1955.

H. D. JEFFRIES,  
Clerk of the Council.

Town Hall,  
Beeston, Nottingham.

[9093]

## APPOINTMENTS—contd.

## CITY AND COUNTY OF NEWCASTLE UPON TYNE.

## CITY ARCHITECT'S DEPARTMENT.

THE City Architect will be pleased to receive applications for vacancies in his Department on the following salary grades:

- A.P.T. Division, Grade IV (£675-£825).
- A.P.T. Division, Grade III (£600-£725).
- A.P.T. Division, Grade II (£560-£640).

The appointments will be subject to the provisions of the Local Government Superannuation Act, 1953, and to one month's notice on either side. Successful candidates will be required to pass a medical examination.

Candidates for Posts (a) and (b) should be fully qualified architects with an appreciation of good design and possessing sound experience.

Applications, stating position applied for, age, particulars of training, qualifications, experience, present and past appointments, together with copies of two recent testimonials or the names and addresses of two persons to whom reference may be made, should be addressed to George Kenyon, A.R.I.B.A., A.M.T.P.I., City Architect, 18, Cloth Market, Newcastle upon Tyne, 1.

JOHN ATKINSON,

Town Clerk.

Town Hall,  
Newcastle upon Tyne, 1.  
9th April, 1955.

[9065]

## URBAN DISTRICT COUNCIL OF CORBY.

## DEPARTMENT OF THE ENGINEER AND SURVEYOR.

## SENIOR QUANTITY SURVEYOR.

APPLICATIONS are invited for the above appointment at a salary in accordance with new Grade A.P.T. V (£750-£900), commencing at £750 per annum.

Applicants must have passed the final R.I.C.S. (Quantities Section) examination and be thoroughly experienced in the preparation of Bills of Quantities, adjustment of variations and settlement of final accounts. Previous experience of substantial contracts for local authority housing is desirable.

The provisions of the Local Government Superannuation Acts, 1937-1953, will apply to this appointment.

Housing accommodation will be made available to the successful candidate, if married.

Forms of application may be obtained from the undersigned, and completed forms must be received not later than by the first post on Saturday, the 30th April, 1955.

G. B. BLACKALL,  
Clerk of the Council.

Council Offices,  
Corby,  
Northants.  
7th April, 1955.

[9064]

APPLICATIONS are invited for the following appointment on the permanent staff of the Regent Oil Co., Ltd.:

**ONE ARCHITECTURAL ASSISTANT,** starting salary £500/£650 p.a., according to experience and ability. Applicants should have passed the Royal Institute of British Architects Intermediate Examination and should have sound practical experience.

The work includes several large projects, laboratories and other technical buildings, offices, canteens, garages, and service stations throughout the country. A thorough working knowledge of construction and contemporary design is essential. The post is progressive and pensionable.

Applicants should communicate with G. H. Toogood, A.R.I.B.A., Company Architect, Regent Oil Co., Ltd., 117, Park St., London, W.1 (Telephone: Mayfair 8474), by letter or telephone, giving full particulars, including whether they have completed their National Service.

[9111]

## COUNTY BOROUGH OF BURNLEY.

APPLICATIONS are invited for the appointment of an **ARCHITECTURAL ASSISTANT** in the Borough Engineer and Surveyor's Department at a salary in accordance with the New Special Grade of the National Scales (£650-£825-£775).

Applicants should be Associate Members of the Royal Institute of British Architects and have had considerable experience in municipal building projects, particularly educational buildings.

Form of application and conditions of appointment may be obtained from the Borough Engineer, 22/24, Nich-ias St., Burnley, and should be returned to him not later than Saturday, the 30th April, 1955.

C. V. THORNLEY,

Town Clerk.  
[9110]

## APPOINTMENTS—contd.

## COUNTY BOROUGH OF EAST HAM.

**PRINCIPAL ASSISTANT ARCHITECT—**Grade V, £750-£900 (experience with Schools and other educational building is desirable).

**ARCHITECTURAL ASSISTANT—Grade II, £560-£640.**

**JUNIOR ARCHITECTURAL ASSISTANT—Grade I, £500-£580.**

London Weighing is paid in addition. Salary in excess of the minima may be paid according to qualifications and experience.

Subsistence allowances may be granted over a reasonable period to the persons appointed if unable to obtain suitable housing accommodation, necessitating the maintenance of two homes.

Further details and application forms returnable by 6th May, 1955, from the Town Clerk, Town Hall, East Ham, E.6.

[9096]

## URBAN DISTRICT COUNCIL OF NORTHFLEET.

## HOUSING—CLERK OF WORKS.

APPLICATIONS are invited for the temporary appointment of **CLERK OF WORKS** in connection with the erection of 60 traditional brick houses on the Painters Ash Estate.

Applicants must have a sound knowledge and an extensive experience of the building industry.

The salary will be within the range £530 to £590 per annum, according to qualifications and experience.

Applications, on forms to be obtained from the undersigned, must be returned not later than Thursday, May 5th, 1955.

W. G. FUTCHER,  
Clerk of the Council.

Council Offices,  
Northfleet, Kent.  
April, 1955.

[9094]

## BOROUGH OF BASINGSTOKE.

## BOROUGH ARCHITECT'S DEPARTMENT.

APPLICATIONS are invited for the appointment of an **ARCHITECTURAL ASSISTANT, A.P.T., Grade II (£560-£640).**

Applicants must have reached the standard of the Intermediate Examination of the R.I.B.A. and have had good experience in Housing of Contemporary Design.

The appointment will be subject to the provisions of the Local Government Superannuation Acts, 1937, to 1953, and to the National Conditions of Service and the successful candidate will be required to pass a medical examination.

Applications, stating age, qualifications and giving details of education and experience, together with copies of two recent testimonials, are to be submitted to the Borough Architect (Eric Almond, Dipl. Arch., A.R.I.B.A.), Municipal Buildings, Basingstoke, not later than the 5th May, 1955.

Candidates must state if housing accommodation is required.

Meirion O. Jones,  
Municipal Buildings,  
Basingstoke.

Town Clerk.  
[9112]

## URBAN DISTRICT OF FELTHAM.

**TWO TEMPORARY ARCHITECTURAL ASSISTANTS** required. Salaries within the new Grade A.P.T. IV (£675-£825 per annum) plus London "weighting." Applicants must be suitably qualified.

Forms of application, obtainable from the undersigned, must be returned, accompanied by copies of two testimonials, not later than 6th May, 1955. Canvassing directly or indirectly will disqualify and applicants must disclose, in writing, whether to their knowledge they are related to any member of or the holder of any senior office under the Council.

M. W. COUPE,  
Council Offices,  
FELTHAM, Middx.

[9113]

## SOMERSET COUNTY COUNCIL.

## ARCHITECT'S DEPARTMENT.

APPLICATIONS are invited for the following appointments on the established staff of the Department, viz.:

**ARCHITECTURAL ASSISTANTS. A.P.T. Grade VI (£825-£1,000).**

Candidates must be Associate Members of the Royal Institute of British Architects with a high standard of contemporary design, fully experienced in the construction of school buildings, and be accustomed to accepting responsibility, and contract administration of major projects.

The appointments will be subject to the provisions of the Local Government Superannuation Acts, 1937 and 1953, and the successful candidates will be required to pass a medical examination.

Applications, stating age, qualifications and experience and accompanied by a copy of one recent testimonial and the names and addresses of two technical referees, should be forwarded to the undersigned not later than April 30, 1955.

R. O. HARRIS, F.R.I.B.A.,  
County Architect.

Park Street,  
Taunton.

[9114]



## APPOINTMENTS—contd.

## BOROUGH OF LEYTON.

**A**PPPLICATIONS are invited for the appointment of a **TEMPORARY CLERK OF WORKS** to supervise general building works at an inclusive salary of £12 10s per week.

Candidates should be suitably experienced to perform the duties of Clerk of Works pertaining to the supervision of contracts, preparation of reports, measurement of works, etc. Details and form of application may be obtained from Mr. H. D. Peake, M.Sc. (Eng.), Borough Engineer and Surveyor, Town Hall, Leyton, E.10, to whom they should be returned not later than Friday, 6th May, 1955.

D. J. OSBORNE,  
Town Clerk.

Town Hall,  
Leyton, E.10. [9073]

## MISCELLANEOUS SECTION

**RATE:** 1/6d. per line, minimum 3/-, average line 6 words. Each paragraph charged separately.

**BOX NOS.** add 2 words plus 1/- for registration and forwarding replies which should be addressed c/o, "The Architect & Building News," Dorset House, Stamford Street, London, S.E.1.

**PRESS DAY Monday.** Remittances payable to Iliffe & Sons Ltd., Dorset House, Stamford Street, London, S.E.1.

No responsibility accepted for errors.

## ARCHITECTURAL APPOINTMENTS VACANT

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is exempted from the provisions of The Notification of Vacancies Order, 1952.

**ARCHITECTS'** assistants (all grades) required by large firm of London architects.—Apply Box 3279, c/o A. & B.N. [9082]

**ASSISTANT** required immediately about Intermediate standard for general practice.—Jacob & O'Farrell, 31, New Canal, Salisbury. Tel. 4972. [9079]

**ARCHITECTURAL Assistants, Senior and Junior,** required for busy Birmingham practice. Apply stating experience and salary required.—Box 3349, c/o A. & B.N. [9102]

**SENIOR architectural assistant required, R.I.B.A.** Final Standard, for varied London practice.—Write giving particulars of age, experience, salary required, etc.—Box 3094, c/o A. & B.N. [9019]

**ARCHITECT'S Assistants required (1 senior and 2 junior)** for West End office.—Write stating full particulars and salary required to Box 2085, c/o A. & B.N. [8819]

**ASSISTANT** required for general practice in Woking and London. Inter. standard. Office experience essential.—Particulars to A. Whitburn, 12, Broadway, Woking 810. [9107]

**JUNIOR and intermediate architectural assistants** required urgently in London office with widely varied practice; good salaries; 5-day week.—Lewis Solomon, Son & Joseph, Hol. 5108 or 7082. [9038]

**ARCHITECTURAL Assistants** required with office experience, preferably industrial or schools, salary by arrangement.—Llewellyn Smith & Waters, 103, Old Brompton Road, S.W.7. [9089]

**WESTWOOD, SONS & HARRISON, F.F.R.I.B.A.,** require senior and junior architectural assistants with office experience.—Apply in writing to 46, Baker St., W.1. [9071]

**SENIOR and Intermediate Architectural Assistants** required. 5-day week. Write or telephone, giving full particulars, including age and salary, to Harker & Hall, Architects, 13, Welbeck Street, W.1. (Welbeck 0061.) [9067]

**SENIOR and Junior Architectural Assistants** required for London and Watford offices engaged on large commercial and industrial projects. 5-day week. Good salaries offered.—Box 3327, c/o A. & B.N. [9092]

**ASSISTANT Architect, intermediate standard,** urgently required for general practice, good salary and prospects for suitable applicant.—Write giving age and experience to W. D. Sterland, 86, Friar Lane, Nottingham. [9099]

## ARCHITECTURAL APPOINTMENTS VACANT—contd.

**J. M. AUSTIN-SMITH & PARTNER** require Architectural Assistant, Intermediate or Final standard with some office experience.—Apply, giving full particulars to 29, Sackville St., W.1. [9067]

**EAST Midlands.**—Senior Assistant, final standard, 2/3 years' office experience, for small general practice, experience in schools and ability to drive car an advantage; accommodation available.—Box 3346, c/o A. & B.N. [9095]

**R. & D. Hall, F.A.R.I.B.A.,** Masonic Buildings, W. Wales, require one qualified architectural assistant and one qualified quantity surveyor, interesting work in pleasant area, ability and energy essential with salaries accordingly. [9039]

**ASSISTANT, Intermediate or Final,** willing to accept responsibility, wanted in private office in Midlands country town. Mainly domestic and ecclesiastical. Salary £400 to £600 according to capabilities.—Box 3350, c/o A. & B.N. [9106]

**ARCHITECTURAL Assistant** required of R.I.B.A. Intermediate or Final standard.—Give details of qualifications, age, experience and salary required to: H. & D. Hall, Architects, Masonic Buildings, Bangor, N. Wales. [9039]

**HELLBERG & HARRIS F.A.R.I.B.A.,** require senior assistant for school, industrial and commercial work.—Apply stating experience and salary required to 13, Queen Victoria Rd., Coventry. Tel. 40521-3. [9021]

**ARCHITECT'S Assistant, Final standard,** required in small modern office. Good draughtsmanship and some office experience essential.—Please apply by letter to Watson & Coates, F.A.R.I.B.A., 6, Gray's Inn Square, W.C.1. [9055]

**ARCHITECTURAL ASSISTANTS** with considerable experience required for general practice, good salary paid to suitable applicants. Reply, stating age and experience, to Thomas Worthington & Sons, 178, Oxford Rd., Manchester, 13. [9066]

**REQUIRED immediately Intermediate and Junior Architectural Assistants** for private practice of interesting and varied nature.—Apply Lambert & Oliver, Chartered Architects, Bridport, Dorset, giving details of age, experience and salary required. [9058]

**A VACANCY** occurs for a young architect with sound experience in construction to develop systems applicable to multi-storey building; the position will be in London and a good salary will be paid to suitable applicant.—Apply Box 3146, c/o A. & B.N. [9043]

**ARCHITECTS' Co-partnership** require assistant for working drawings and detailed design; salary according to experience; qualified assistant also required; office doing work in U.K. and West Africa.—Tel. Langham 5791, or write 44, Charlotte St., W.1. [9083]

**ARCHITECTURAL Assistant** required with office experience for private practice must be capable of taking charge of contracts, reply in writing stating age, qualifications, experience and salary required to—Leach, Rhodes & Walker, 90, Deansgate, Manchester, 3. [9091]

**THREE architectural assistants** required for work on contemporary industrial buildings; one of Final and two of Intermediate R.I.B.A. standard; good salaries and plenty of opportunity for initiative; London office.—Write giving details of salary, experience to Box 3260, c/o A. & B.N. [9070]

**ARCHITECTURAL Assistant** wanted at once for busy office; must have R.I.B.A. Intermediate, previous experience and enthusiasm. Salary £400—£550 according to capability.—Apply in writing, giving full particulars, Antony Lamb, A.R.I.B.A., A.M.T.P.I., Ottery St. Mary, Devon. [9060]

**ARCHITECTURAL Assistants of Final and Intermediate standard** required for Bristol Office. Varied and interesting work; good salary; contributory pension scheme.—Write, giving age, experience and salary, to W. H. Watkins, Grey, F.F.R.I.B.A., and Partners, 1, Clare St., Bristol, 1. [9040]

**2 Assistants, Inter standard,** preferably with some office experience, commencing salary £500-£650 according to qualification; interesting work on large scale housing and flats, schools, hospitals, etc.; permanent and progressive situations for good men. 5-day week.—Write or 'phone William Crabtree, 8, Robert Adam Street, W.1. Welbeck 8918. [9098]

**ARCHITECTURAL Assistant** required with minimum qualification of Intermediate R.I.B.A. Preference will be given to applicants having some experience in the design of industrial buildings and housing.—Write stating age and full particulars to Mr. A. E. Cresswell, A.R.I.B.A., 40, Claremont Road, Cricklewood, London, N.W.2. [9068]

**TWO Architectural Assistants** required for busy practice engaged upon a large programme for schools, industrial buildings, offices, etc. Salaries up to £750 and £520 respectively according to qualifications and experience. Five-day week. Write, giving full particulars, to Johns, Slater & Haward, F.A.R.I.B.A., 32, Foundation St., Ipswich. [9059]

## ARCHITECTURAL APPOINTMENTS VACANT—contd.

**ASSISTANT** able to develop working drawings from sketch designs and to take control of small jobs from start to finish required in south-west country practice. Starting salary in range £300 to £400 with prospect of share in profits upon proof of enthusiasm and reliability.—Write giving fullest possible particulars to Alec H. Joy, A.R.I.B.A., Northville Rd., Kingsbridge, Devon. [9108]

**LONDON BRICK COMPANY, Ltd.**—Applications are invited for the following positions in the Estates Department, Stewartry, Bedford:—(a) Architect—age 30-35 years. (b) Junior Architectural Assistant—age 20-25 years.—Applications, giving details of training, age, qualifications, experience and stating salary required, should be submitted to Personnel Manager, Stewartry, Bedford. [9103]

**SAMUEL MORRISON & PARTNERS** require assistant architects of Intermediate and Final standard, with or without experience; work includes interesting contemporary schools, factories, shops and houses in various parts of the country, industrial design and the development of prefabricated structures; salaries comparable to Local Authority scales; interview expenses paid; good office accommodation in pleasant surroundings.—St. Alkmund's House, Belper Rd., Derby. [9002]

**IMPERIAL CHEMICAL INDUSTRIES, Ltd.,** has a vacancy for an architectural assistant to work in their London offices; candidates should be associate members of the R.I.B.A. between the age of 25-35 and should have a thorough knowledge of architectural works, particularly in regard to the design and construction of offices, canteens, laboratories, housing and warehouses.—Applications, stating age, qualifications and experience, should be sent to Head Office & Regions Staff Dept. (G.D.C.), Imperial Chemical Industries, Ltd., 1, C.C. House, Millbank, S.W.1. [9046]

**T. H. THORPE & PARTNERS,** of 41, Friar Gate, Derby, have the following vacancies on their staff for keen Assistants willing to accept responsibility.

Assistant Architect to take control of commercial and industrial contracts up to the value of £100,000. Applicants must be A.R.I.B.A. with considerable office experience. Salary £800 p.a. minimum and according to experience.

Assistant Architect to work on hospital contracts in the Derbyshire area. Applicants should be preferably qualified A.R.I.B.A. Salary £700-£850 p.a. according to qualification and experience.

Architectural Assistants to work on hospital and housing contracts. Applicants should be Inter-R.I.B.A. standard. Salary £500-£600 p.a. according to experience. [9100]

**IMPERIAL CHEMICAL INDUSTRIES Ltd.,** Wilton Works, near Redcar, requires **ARCHITECTURAL ASSISTANTS**

in connection with the further development of the new chemical factory at Wilton. Candidates should be experienced in the preparation of working drawings of canteens, laboratories and other similar buildings.

Preference will be given to applicants possessing at least R.I.B.A. (Inter.)

Appointments are to the permanent staff, 5-day/39-hour week, with first-class working conditions including Pension Fund and recreation facilities.

Write for application for employment form to the Staff Officer, Imperial Chemical Industries, Ltd., Wilton Works, Middlesbrough, Yorkshire, or apply to the nearest Employment Exchange quoting advertisement reference ICI/X/198/j. [9097]

## SITUATIONS VACANT

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is exempted from the provisions of The Notification of Vacancies Order, 1952.

**SHORTHAND-TYPIST** required, architect's office, West End; 5-day week.—Apply Box 2985, c/o A. & B.N. [8999]

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**EXPERIENCED Purpose-made Metal Window Draughtsman** required. Top rate to right man. N.E. London.—Write Box No. 339, W.B.G., 39, Cheapside, London, E.C.2. [9049]

**JUNIOR** required for general office duties in quantity surveyors' office; good prospects.—Write to Sydney C. Gordon, Finsbury House, Blomfield St., London, E.C.2. [9075]

**ASSISTANT** required in busy practice in West End, in early '20s, about Intermediate R.I.B.A. standard; excellent opportunities of gaining all-round experience.—Box 0672, c/o A. & B.N. [0636]

## SITUATIONS VACANT—contd.

**BUILDING** Draughtsman required by large engineering firm in N.W. London area for work in drawings, measuring existing buildings, levelling, etc., with experience in factory and office buildings.

**APPLICATIONS** stating age, experience and salary required to Box 2E, R.7056, A.K. Adv., 212a, Shaftesbury Ave., London, W.C.2. [9069]

**CLERK** of Works required of good general experience, particularly maintenance; must have initiative. Applications, stating age, experience and salary required, to Chief Architect, The Granada Theatres, Ltd., 36, Golden Sq., London W.1. [9036]

**JUNIOR** taker-off required, minimum Intermediate standard; salary commencing £500; pension scheme; varied work; state experience.—Kidge & Partners, 23, Beaumont St., Oxford. [9080]

**COST** clerks and site clerks, preferably experienced.—Write, stating experience, salary required, to Percy Bilton, Ltd., Civil Engineering and Building Contractors, 113, Park St., W.1. [9076]

**SENIOR** estimator and surveyor required by West Country builders; fully experienced in all types of work.—Particulars of experience, age and salary required in confidence to T. Holdaway & Sons, Ltd., Westbury, Wiltshire. [9077]

**MEN** required in Ellesmere Port area for Drawing Office work, structural or architectural experience necessary, no age limit, the older man is especially welcome, 5-day week, salary from £11/10 to £15, state age and experience to—Box 3294, c/o A. & B.N. [9088]

**ESTIMATOR** Buyer sought by firm specialising in precast concrete structures. Permanent appointment carrying exceptional opportunities for advancement.—Write giving particulars of past experience, Maycrete, Ltd., Parliament Mansions, Abbey Orchard St., S.W.1. Tel. Abbey 2459, reference GS. [9104]

**BUILDING** surveyor required by West End estate agents; able to make surveys and prepare specifications of general building work, supervise work in progress and check final accounts.—Write, stating age, experience and salary required, H.N.L., Messrs. Knight, Frank & Rutley, 20, Hanover Square, W.1. [9081]

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## SITUATIONS VACANT—contd.

**YOUNG** man (16-18) wishing to enter quantity surveying profession required in London office; chief qualification is educational standard sufficient to exempt applicant from taking the preliminary examination of the R.I.C.S.—Reply, stating age and details of education, to Reynolds & Young, Chartered Quantity Surveyors, 329, High Holborn, London, W.C.1. [9078]

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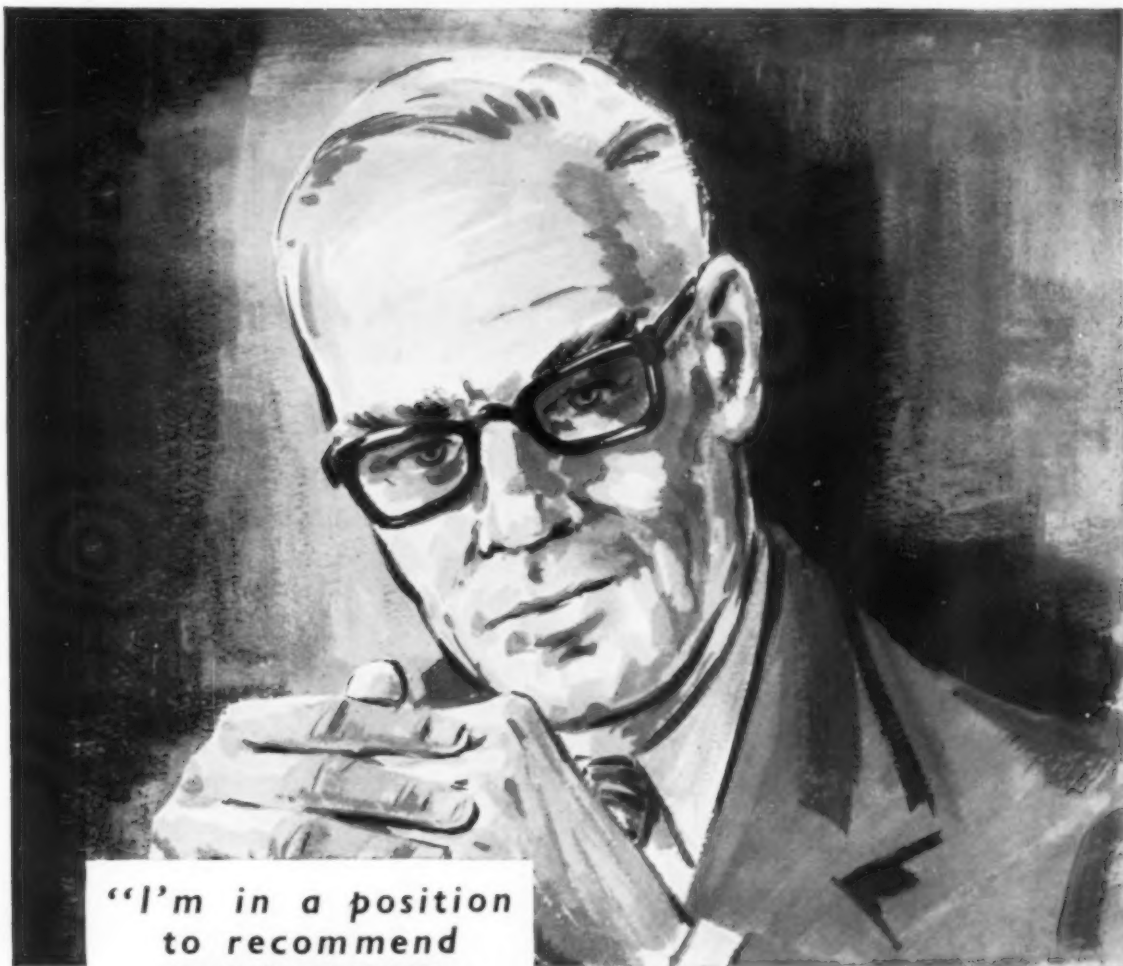
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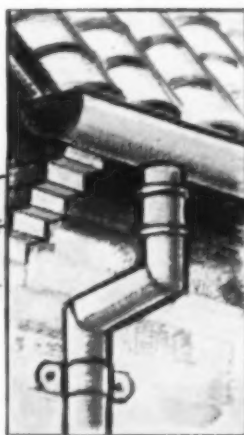
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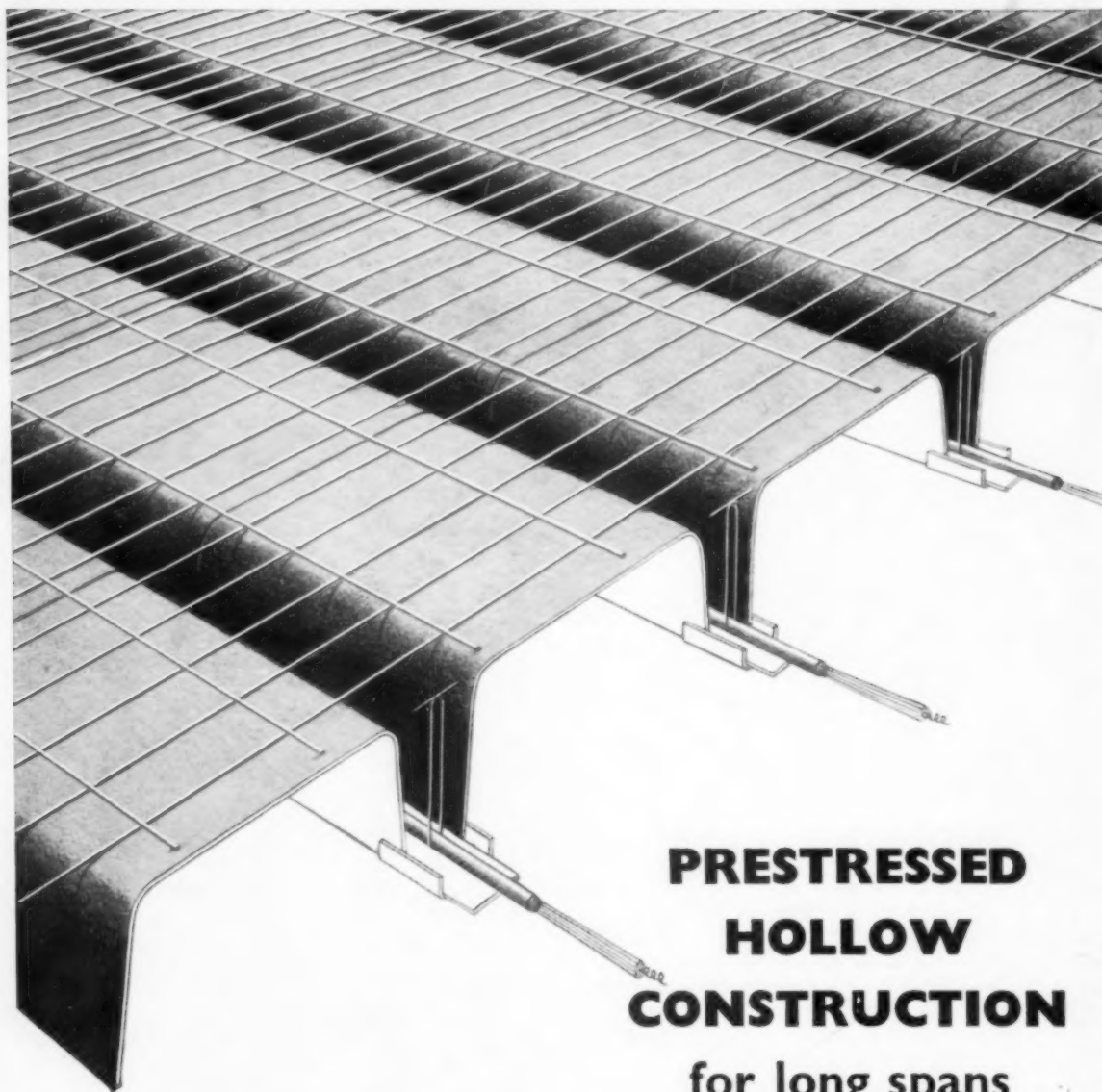


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